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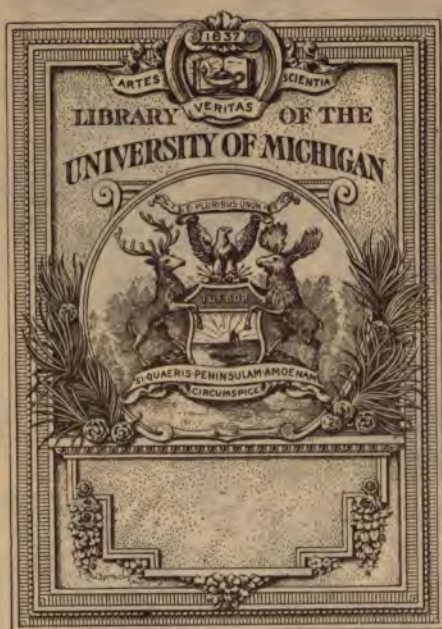
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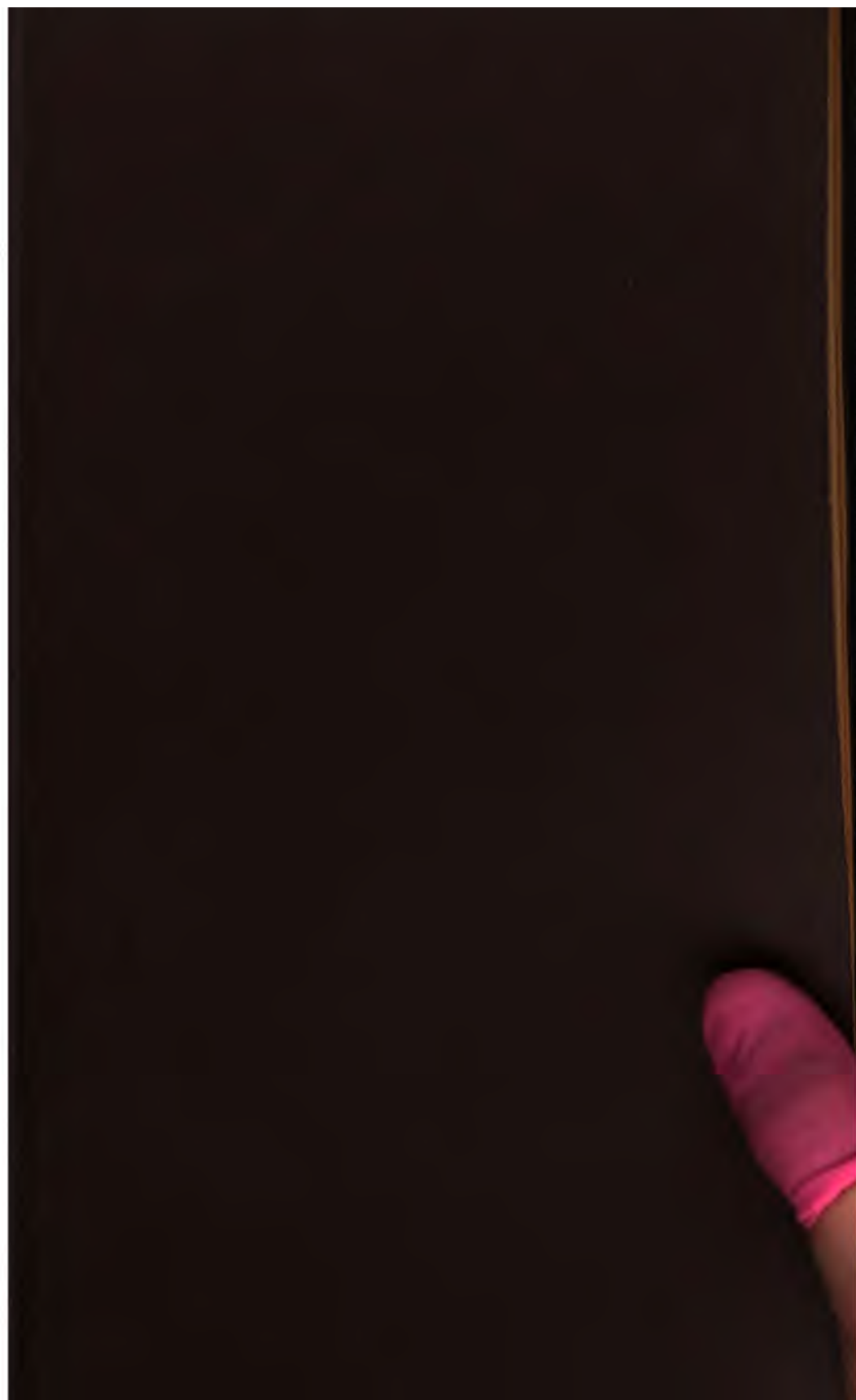
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1903/04

NINTH ANNUAL REPORT

OF THE

WATER COMMISSIONER

FOR THE

YEAR ENDING JAN. 31, 1904

Printed for the Department



BOSTON, *Water Dept.*
MUNICIPAL PRINTING OFFICE
1904

Reserve



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OFFICE OF THE WATER COMMISSIONER,
CITY HALL, BOSTON, February 1, 1904.

HON. PATRICK A. COLLINS,

Mayor of the City of Boston:

SIR,— I submit herewith the ninth annual report of the Water Commissioner for the year ending January 31, 1904.

The receipts and expenditures of the department for the year were as follows:

Total receipts from all sources	\$2,989,749 27
Balance at beginning of the year (from tax levy)	61,769 12
Total	<u>\$3,051,518 39</u>
Total expenditures for all purposes	2,767,006 24
Balance at end of the year (loan)	<u><u>\$284,512 15</u></u>

TOTAL RECEIPTS OF THE YEAR BY SOURCES.

Sales of water	\$2,301,880 24
Service, elevator, fire, motor and stand-pipes and repairs, labor, materials, etc.	40,757 72
City's proportion of entrance fees of other cities and towns for use of Metropolitan water system	25,995 38
Fees for summonses	1,803 00
Shutting off and letting on water, account of repairs . .	1,679 00
Carried forward	<u><u>\$2,372,115 34</u></u>

<i>Brought forward</i>	\$2,372,115 34
Shutting off and letting on water, account of non-payment of bills	1,540 00
Difference on cost of laying main pipes	1,005 00
Use of West Roxbury pumping plant	749 65
Sale of land to Town of Brookline	733 75
Board of City Engineer's horse	312 00
Interest on deposits	153 05
Rebate	2 14
	<hr/>
	\$2,376,610 93
Excess of income of Cochituate Water Sinking Fund over requirements for the year	292,000 00
	<hr/>
	\$2,668,610 93
Credited from taxes	21,138 34
	<hr/>
	\$2,689,749 27
Loan (Extensions of Mains, etc., issued January, 1904)	300,000 00
	<hr/>
	<u>\$2,989,749 27</u>
 EXPENDITURES.	
Current expenses and extensions	\$827,286 89
Metropolitan water assessment	1,510,857 46
Interest on funded debt	411,050 00
Refunded water rates	2,324 04
Extension of mains, etc. (from loan)	15,487 85
	<hr/>
	<u>\$2,767,006 24</u>

For detailed account of expenditures, condition of water debt, etc., etc., see statements annexed.

The Metropolitan Water Assessment paid in December, 1903, amounted to \$1,510,857.46, an increase of \$236,752.15 over the previous assessment. The enormous increase in this assessment since the first payment in the year 1898 is shown by the following list of yearly payments:

Year 1898	\$285,600 54
" 1899	411,861 54
" 1900	578,696 96
" 1901	1,169,105 62
" 1902	1,274,105 31
" 1903	1,510,857 46

During the year the usual large amount of work of varied character incidental to the carrying on of the department has been accomplished.

The main pipe work has been chiefly of a relaying character which is to be expected from now on, as the requirements of newly laid out streets appear to have decreased considerably, and our attention is demanded by the serious

condition of the mains in the older section of the city. Some of these mains have been in the ground for half a century and are in an advanced stage of decomposition; others are too small to give an adequate supply to the great buildings which it is now customary to erect. Moreover, provision must be made for an increased fire protection in those parts of the city where buildings are changing in size, character and value. This necessitates increasing the capacity of the mains and arranging the feed lines so as to give, where needed, an ample supply to meet the concentrated consumption which results from the massing of fire engines in limited areas, necessary in case of all large fires.

In the relaying work done in connection with street improvements, our effort has been to work in harmony with the Street Department by immediately preceding the work of that department wherever possible, thus making the disturbance in the street as nearly concerted as can be, with a corresponding reduction in the inconvenience caused the public, and insuring an undisturbed pavement for several years as far as the water mains are concerned.

An important feature of the work of the department during the past year was the rearrangement and relocation of water pipes and fixtures caused by the various public works under construction, chief of which were the East Boston Tunnel, the abolishment of grade crossings in Blue Hill avenue and Oakland street and the laying out of the Bennington street and Columbia road boulevards.

The 30-inch main in Tremont street was relaid between Northampton and Rutland streets. It was found that this main had deteriorated greatly through the action of the soil in which it was laid. The relaying of this main was therefore a much-needed improvement. The same may be said of the work of relaying about 600 feet of 40-inch main in Brookline avenue, thus completing the work started last year.

The 30-inch high service main in Washington street, Dorchester, was extended 928 feet, from Burt street towards Codman street.

About 3,300 feet of 12-inch main was laid at Long Island, Boston Harbor, to meet the rapidly increasing consumption of water, due to the new buildings and forts that have been erected during the past few years.

A difficult and dangerous piece of work was the laying of 20-inch and 12-inch mains, under the tracks between Fort Point channel and Foundry street, under the West Fourth-street bridge.

The general work incident to the maintenance of the department seems to be growing in extent every year. This of course is only natural, considering that the fixtures and property of the department are growing older, and consequently requiring repairs and renewal in greater amount as the years go by. Reference to the tables contained in the report of the Distribution Division, appended, will give an idea of the diversified character and amount of the work.

The present winter has so far proved to be an unusually severe one, and much trouble and expense has been occasioned in keeping the hydrants in readiness for use, and in thawing out service pipes. It has become necessary to utilize a large part of the force in making daily inspections and tests of the hydrants to insure their being in condition for ready use. In a few cases in exposed locations it has been next to impossible to keep the hydrants from freezing during the extreme cold spells. Fortunately, however, up to the present time no serious results have been experienced therefrom.

More service pipes have been frozen during the present winter than for many years past. This of course was due to the great depth reached by the frost, and the shallow covering of the pipes in some localities.

The method of thawing frozen services heretofore in vogue I found to be crude and old-fashioned, requiring much time and consequently causing much hardship to those deprived of water. I have recently caused to be tried a method of thawing the pipes by electricity, and I am pleased to say that it has so far proved successful. Should the next winter be as severe as the present one I shall very likely employ the electrical method generally. (A detailed description of the process is given in the City Engineer's report appended.)

Electrolysis investigation has proceeded consistently through the year with the result that we are finding an increasing amount of electrical current in our pipes and fixtures, with a corresponding deterioration of the same. Something must be done to restrict these stray currents, and I have reason to believe that the different companies responsible are doing what they can along such lines. The progress is necessarily slow, as the problem is a new one and can be solved only by continued experimenting.

Particular attention was paid during the year to the subject of waste, and a special inspection, wherein the Deacon system was utilized, was made under the direction of the Engineering Division of the department. Several large leaks were discovered and stopped, and much valuable data obtained by which the house inspection force of the Income

Division was accurately guided in its work of inside inspection.

The Church stop-cocks, installed some years ago in large numbers, are practically useless through corrosion and breaking of the rods, and are being replaced as rapidly as possible by a new type of shut-off cock.

The use of the Smith tapping machine has been extended during the past year, so that connections are now made with mains as large as twelve inches in size, without shutting down the main, thus doing away with much inconvenience to the public by being deprived of water while such work is going on.

The cold water fountains have been operated successfully during the past summer, evidently to the satisfaction of the public in general. The ice used in these fountains was furnished by the Boston and Independent Ice Companies, at the rate of \$3 per ton, delivered into the fountain boxes in blocks.

The plain block and macadam pavement of former years, which is being rapidly replaced by asphalt, bituminous macadam, and pitch and pebble pavement with cement base, all of which are expensive and have to be replaced by this department when disturbed to permit of the prosecution of our work, tend largely to swell the expenditures of this department each year.

I deem it my duty to call the attention of your Honor to the desirability of securing a modification of the Act of 1891, chapter 323, so far as it relates to the laying of service pipes in new streets constructed under said Act. The intent of this law was to obviate the necessity for digging up streets after once being constructed, but the object is by no means accomplished. There are many serious objections to the practice of laying service pipes to vacant lots, and the experience of this department has shown the folly of attempting to anticipate the needs for water supplies. Many of the service pipes laid are useless, owing to the fact that large buildings are frequently erected covering several lots, as, for instance, when the Horticultural and Chickering Halls were erected on Huntington avenue this department was obliged to abandon seven vacant lot pipes which were laid to supply lots covered by these buildings, which really required only two pipes, one of which was entered from Massachusetts avenue. The asphalt paving had to be cut in order to plug these useless pipes, and the long lengths of lead pipe left in the ground are a total loss. This is one of many cases that might be cited. This matter has been referred to by my predecessors in previous reports, but so far as I am aware no

steps have ever been taken towards modifying or repealing the Act. The law so far as it pertains to the extension of mains in new streets has proved satisfactory.

Reports in detail of work performed in the Income and Distribution divisions and the Engineering Department will be found annexed herewith.

Respectfully,

EUGENE S. SULLIVAN,

Water Commissioner.

WATER DEPARTMENT.

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Details of Expenditures, under the appropriation for Current Expenses and Extensions, for the fiscal year ending January 31, 1904. (From Revenue.)

Salaries and wages :		
Eugene S. Sullivan, Commissioner	\$5,000 00	
Assistant Commissioners :		
Isaac Rosnosky	3,000 00	
John J. Leahy	3,000 00	
Chief Clerk and Secretary	3,000 00	
Employees	541,039 48	
		\$555,039 48
Water-pipe and other castings		151,492 79
Stable :		
Hay, grain, straw, and board	\$7,803 56	
Vehicles and repairs	3,353 40	
Horseshoeing, veterinary services, etc.	2,634 34	
Horses, purchase of	2,100 00	
Harnesses and repairs, etc.	1,038 82	
		16,930 12
Tools, machinery, and repairs of same, iron, steel, hardware, and small supplies		12,991 17
Lead and lead pipe		12,467 23
Meters :		
New meters	\$10,827 50	
Repairs and extra parts	1,260 91	
		12,088 41
Repairs and alterations of buildings, streets and structures		9,839 80
Lumber		8,334 40
Blasting and excavating pipe trenches		7,397 43
Travelling expenses and transportation of employees		7,257 05
Teaming and freight		6,290 25
Printing		4,341 92
Salt		4,320 30
Fuel		3,778 19
Telephone service		1,786 30
Stationery, postage, etc.		1,397 63
Gravel and crushed stone		1,168 79
Oils		844 59
Bricks		479 00
Rents		420 00
Waterproof clothing		411 09
Cement and sand		369 05
Taxes		363 00
Land, Whitehall pond, taken in 1890		325 00
Gas		287 79
Breaking up water-pipe		244 00
Badges		220 00
Professional and expert services		153 00
Advertising		146 29
Insurance on boilers		100 00
Salt hay		90 88
Drain-pipe		90 67
Furniture		52 10
Ice		37 63
Premium on surety bonds		25 00
		\$821,580 35
Damages		5,706 54
		<u>\$827,286 89</u>

Expenditure under the appropriation for Extension of Mains, etc. (From Loan.)

Camden Iron Works, on account of contract for water-pipes \$15,487 85

There was also expended by the Water Department the sum of \$3,477.14 for ice for drinking fountains, under an order of the City Council of June 2, 1903, appropriating \$5,000 from the Reserve Fund.

COST OF CONSTRUCTION AND CONDITION OF THE WATER DEBT.

Cost of construction of Water Works to February 1, 1903	\$15,908,322 79
Cost of construction of Water Works to February 1, 1904	<u>16,025,824 04</u>
Increase during the year	<u>\$117,501 25</u>
Stock on hand February 1, 1903	\$114,617 38
Stock on hand February 1, 1904	<u>152,398 21</u>
Increase during the year	<u>\$37,780 83</u>
The outstanding Water Loans February 1, 1903, were	\$9,501,000 00
The outstanding Water Loans February 1, 1904, were	<u>8,227,000 00</u>
Decrease during the year	<u>\$1,274,000 00</u>
The Water Sinking-Fund February 1, 1903, was	\$8,893,615 94
The Water Sinking-Fund February 1, 1904, was	<u>7,337,902 79</u>
Decrease during the year	<u>\$1,555,713 15</u>
Net Water Debt February 1, 1903	\$607,384 06
Net Water Debt February 1, 1904	<u>889,097 21</u>
Increase during the year	<u>\$281,713 15</u>

The outstanding Water Loans on this date, February 1, 1904, are as follows:

Loans.		Date of Maturity.	Amount.
6	per cent. Currency,	Due Jan., 1905	\$3,000 00
6	" " "	" April, 1905	53,700 00
6	" " "	" July, 1905	10,000 00
6	" " "	" Oct., 1905	6,000 00
5	" " Gold Loan,	" Oct., 1905	887,000 00
6	" " Currency,	" Jan., 1906	80,550 00
Carried forward,			<u>\$1,040,250 00</u>

WATER DEPARTMENT.

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Loans.		Date of Maturity.	Amount.
<i>Brought forward, .</i>			\$1,040,250 00
6	per cent. Currency,	Due April, 1906 . . .	8,750 00
5	" " Gold Loan,	" April, 1906 . . .	549,000 00
5	" " "	" Oct., 1906 . . .	1,793,000 00
6	" " Currency,	" Oct., 1906 . . .	4,000 00
6	" " "	" Jan., 1907 . . .	7,000 00
6	" " "	" April, 1907 . . .	5,000 00
6	" " "	" July, 1907 . . .	1,000 00
5	" " Currency Loan,	" Oct., 1907 . . .	1,000 00
5	" " "	" April, 1908 . . .	12,000 00
4	" " Loan,	Due July, 1909 . . .	70,000 00
4½	" " "	" Oct., 1909 . . .	268,000 00
4	" " "	" April, 1910 . . .	277,000 00
4	" " "	" April, 1912 . . .	324,000 00
4	" " "	" Oct., 1913 . . .	56,000 00
4	" " "	" Jan., 1914 . . .	459,000 00
4	" " "	" April, 1914 . . .	18,500 00
4	" " "	" Oct., 1914 . . .	16,000 00
4	" " "	" April, 1915 . . .	45,700 00
4	" " "	" Oct., 1915 . . .	23,000 00
4	" " "	" Jan., 1916 . . .	8,000 00
4	" " "	" April, 1916 . . .	28,500 00
4	" " "	" Oct., 1916 . . .	11,300 00
4	" " "	" Jan., 1917 . . .	21,000 00
3½	" " "	" April, 1917 . . .	275,000 00
4	" " "	" April, 1917 . . .	6,000 00
4	" " "	" July, 1917 . . .	7,000 00
4	" " "	" Oct., 1917 . . .	158,700 00
4	" " "	" Jan., 1918 . . .	20,000 00
4	" " "	" April, 1918 . . .	6,300 00
3½	" " "	" July, 1918 . . .	100,000 00
4	" " "	" Oct., 1918 . . .	95,000 00
4	" " "	" April, 1919 . . .	200,000 00
3½	" " "	" Oct., 1919 . . .	2,000 00
4	" " "	" Oct., 1919 . . .	190,000 00
3½	" " "	" Nov., 1919 . . .	122,000 00
3½	" " "	" Jan., 1920 . . .	70,000 00
4	" " "	" Oct., 1920 . . .	303,000 00
4	" " "	" April, 1921 . . .	100,000 00
4	" " "	" Oct., 1921 . . .	162,500 00
4	" " "	" Jan., 1922 . . .	100,000 00
4	" " "	" April, 1922 . . .	75,000 00
4	" " "	" Oct., 1922 . . .	200,000 00
4	" " "	" Oct., 1923 . . .	26,275 00
4	" " "	" Oct., 1924 . . .	526,225 00
3½	" " "	" Oct., 1927 . . .	25,000 00
3½	" " "	" July, 1929 . . .	410,000 00
Total			<u>\$8,227,000 00</u>

SUMMARY.

3½	per cent. Loans	\$1,004,000 00
4	" " "	3,534,000 00
4½	" " "	268,000 00
5	" " Currency Loans	13,000 00
5	" " Gold "	3,229,000 00
6	" " Loans	179,000 00
Total		<u>\$8,227,000 00</u>

Cochituate Water Sinking-Fund Receipts.

[SINCE THE ESTABLISHMENT OF THE BOARD OF SINKING-FUND COMMISSIONERS IN 1871.]

YEAR.	From Tax Levy of City Income.	Interest on Investments.	Interest on Bank Deposits.	Water Rates, etc.	Premiums on Loans.	Other Sources.	Totals.
1871. April 30, received from Committee on Reduction of Debt.....	\$1,100,000 00						\$1,100,000 00
1871-72.....	14,325 00 Taxes, 9,575 00	\$61,000 00	\$349 67				85,049 67
1872-73.....	9,000 00	70,137 50	1,017 80				80,155 30
1873-74.....	30,090 00	76,799 60	2,072 65				108,963 25
1874-75.....	75,973 28	82,842 25	2,121 13				160,936 66
1875-76.....	65,554 00	85,470 00	3,617 55			\$386 00	155,027 55
1876-77.....	234,614 00	86,245 66	4,119 47	\$26,480 18		915 46	359,574 77
1877-78.....	Taxes, 214,500 00	86,830 85	10,809 31	27,069 92			338,240 08
1878-79.....	Taxes, 207,456 00	93,264 49	6,181 26	177,195 91		9,874 21	493,971 87
1879-80.....		90,472 42	5,687 62	214,707 24		4,411 64	315,278 92
1880-81.....		86,460 00	167 32	195,668 90		1,762 04	284,058 26
1881-82.....		96,546 35	2,767 90	193,840 86		494 08	293,648 69
1882-83.....		105,129 51	8,486 33	219,681 72		1,241 04	331,438 60
1883-84.....		138,120 90	2,268 22				141,362 12
1884-85.....	Taxes, 973 00	143,049 45	7,510 40	209,253 39			359,818 24
1885-86.....		156,694 01	5,804 31	120,129 12		443 27	283,069 71

WATER DEPARTMENT.

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1886-87.....	181,964 89	2,644 70	297,928 95	5,081 12	562,415 66
1887-88.....	199,838 90	4,178 16	221,620 11	425,682 17
1888-89.....	213,048 22	8,968 69	256,013 57	\$11,552 50	.....	489,572 98
1889-90.....	223,000 83	11,780 60	300,903 00	36,092 50	.....	576,726 93
1890-91.....	229,509 17	29,763 94	242,675 22	36,530 00	.....	533,478 33
1891-92.....	175,808 33	22,560 16	275,014 05	.....	78,865 00	553,247 54
1892-93.....	290,506 20	30,148 34	240,435 00	16,418 50	.....	547,503 04
1893-94.....	298,224 44	18,133 08	299,467 27	14,621 75	.....	630,446 49
1894-95.....	312,333 05	18,524 22	297,518 29	.....	9,894 12	633,268 68
1895-96.....	378,819 55	5,892 29	205,791 00	64,690 00	.....	655,192 84
1896-97.....	403,840 02	5,225 08	194,740 00	.....	616 50	604,421 60
1897-98.....	421,928 45	8,337 21	193,395 00	8,833 50	15,877 86	648,372 02
1898-99.....	417,142 02	5,806 85	198,395 00	.....	8,016 00	624,359 87
1899-1900.....	383,662 97	7,632 45	209,824 00	29,685 70	2,148 90	633,104 02
1900-1901.....	397,985 35	15,948 83	206,489 00	.....	.....	620,423 18
1901-1902.....	325,080 96	81,199 25	.....	.....	* 609,000 00	965,290 21
1902-1903.....	313,707 65	37,297 28	.....	.....	.....	351,004 93
1903-1904.....	149,255 27	8,318 82	.....	.....	282 10	157,866 19
		\$335,280 84	\$5,016,171 20	\$218,569 45	\$749,308 34	\$15,104,898 37
	\$2,637,536 28					

* Water Works Fund.

**Cochituate Water Debt, Gross and Net,
At the Close of Each Fiscal Year.**

Fiscal Year.	Gross Debt.	Sinking-funds.	Net Debt.
1847-48.....	\$2,129,056 32	.....	\$2,129,056 32
1848-49.....	3,787,328 98	.....	3,787,328 98
1849-50.....	4,463,205 56	.....	4,463,205 56
1850-51.....	4,955,613 51	.....	4,955,613 51
1851-52.....	5,209,223 26	.....	5,209,223 26
1852-53.....	5,972,976 11	.....	5,972,976 11
1853-54.....	5,432,261 11	.....	5,432,261 11
1854-55.....	5,403,961 11	.....	5,403,961 11
1855-56.....	5,230,961 11	.....	5,230,961 11
1856-57.....	5,031,961 11	.....	5,031,961 11
1857-58.....	4,724,961 11	.....	4,724,961 11
1858-59.....	4,754,461 11	.....	4,754,461 11
1859-60.....	3,846,211 11	.....	3,846,211 11
1860-61.....	3,455,211 11	.....	3,455,211 11
1861-62.....	3,012,711 11	.....	3,012,711 11
1862-63.....	2,992,711 11	.....	2,992,711 11
1863-64.....	2,992,711 11	.....	2,992,711 11
1864-65.....	2,942,711 11	.....	2,942,711 11
1865-66.....	3,152,711 11	.....	3,152,711 11
1866-67.....	3,370,711 11	.....	3,370,711 11
1867-68.....	3,867,711 11	.....	3,867,711 11
1868-69.....	5,107,711 11	.....	5,107,711 11
1869-70.....	5,731,711 11	.....	5,731,711 71
1870-71.....	6,482,711 11	\$1,100,000 00	5,382,711 11
1871-72.....	6,812,711 11	1,185,049 67	5,627,661 44
1872-73.....	6,912,711 11	1,268,234 97	5,644,476 14
1873-74.....	7,863,711 11	1,372,953 62	6,490,757 49
1874-75.....	8,123,711 11	1,533,890 28	6,589,820 83
1875-76.....	9,735,711 11	1,560,917 88	8,174,793 28
1876-77.....	11,548,711 11	1,709,492 60	9,839,218 51
1877-78.....	11,545,273 98	2,043,764 73	9,501,509 25
1878-79.....	11,753,273 98	2,143,847 85	9,609,426 13
1879-80.....	11,697,273 98	1,771,692 92	9,925,581 06
1880-81.....	11,631,273 98	1,989,300 88	9,641,973 10
1881-82.....	11,631,273 98	2,281,857 89	9,349,416 09
1882-83.....	11,955,273 98	2,607,768 46	9,347,505 52
1883-84.....	12,882,273 98	2,746,505 58	10,135,768 40
1884-85.....	13,045,473 98	3,106,323 82	9,939,150 16
1885-86.....	13,491,473 98	3,385,201 26	10,106,272 72
1886-87.....	14,142,273 98	3,947,616 92	10,194,657 06
1887-88.....	14,741,273 98	4,373,304 09	10,367,969 89
1888-89.....	14,941,273 98	4,864,092 54	10,077,181 44
1889-90.....	15,696,273 98	5,440,819 47	10,255,454 51
1890-91.....	16,267,773 98	6,979,297 80	10,288,476 18
1891-92.....	16,423,773 98	6,471,545 34	9,952,228 64
1892-93.....	16,758,773 98	7,019,058 38	9,739,715 60
1893-94.....	17,055,273 98	7,649,504 87	9,405,769 11
1894-95.....	17,761,273 98	8,444,773 55	9,316,500 43
1895-96.....	18,291,273 98	9,099,966 39	9,191,307 59
1896-97.....	18,261,273 98	9,704,387 99	8,556,885 99
1897-98.....	17,911,273 98	9,852,780 01	8,058,513 97
1898-99.....	17,121,273 98	9,487,119 88	7,634,154 10
1899-1900.....	17,396,273 98	9,879,223 90	7,436,050 08
1900-1901.....	11,960,273 98	10,144,647 08	1,815,626 90
1901-1902.....	11,351,017 28	10,422,449 77	928,567 51
1902-1903.....	9,501,000 00	8,593,615 84	607,384 06
1903-1904.....	8,227,000 00	7,337,902 79	889,097 21

¹ No account taken of amounts borrowed temporarily from 1846 to 1852 and afterwards funded by the issue of water bonds that figure in this statement.

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DATE.	CONTRACTORS.	WORK.	AMOUNT.	PAID ON CONTRACT.		
				Previous Year.	Year 1903-1904.	Total.
1902. Feb. 7,	H. P. Nawn	{ Teaming water pipes and materials for year ending January 31, 1903..... }	{ 43 cents per ton, 2,000 lbs., for short haul..... } { 80 cents per ton, 2,000 lbs., for long haul..... }	\$1,807 46	\$222 93	\$2,030 39
" " 10,	Foxboro Foundry Co.....	{ Small iron castings for year ending January 31, 1903..... }	{ No. 1 @ 2½ cents per lb. } { No. 2 @ 1½ " " }	27,121 18	2,981 83	30,113 01
" " 20,	J. H. McCafferty & Co..	{ Composition castings for year ending January 31, 1903..... }	{ No. 1 @ 19½ cents per lb. } { No. 2 @ 19½ " " } { No. 3 @ 14 " " }	5,758 67	2,833 37	8,092 04
" " 21,	{ United States Cast Iron Pipe and Foundry Co.	{ 600 tons 40-inch pipe B. 575 " 36-inch " B. 90 " 30-inch " B. 500 " 12-inch " B. 800 " 10-inch " B. 300 " 8-inch " B. 10 " 4-inch " B. — straight pipe..... } { 2,375 " special castings..... }	@ \$26.45 per ton, 2,000 lbs..... } @ 43.00 " " "..... }	35,072 70	28,010 62	63,083 32
Dec. 17, 1903.	John T. Cavanaugh.....	{ Excavate and back-fill 3,400 feet of trench for 12 inch pipe at Long Island..... }	@ 55 cents per linear foot.....	.....	1,986 60	1,986 60
Feb. 13,	John VarnerIn.....	Blasting Columbia road.....	@ \$3.35 per cubic yard.....	.....	240 50	240 50
Mar. 5,	Thomas Burke.....	" Washington street, Dorchester.....	@ \$2.97 " " ".....	.....	281 56	281 56

Contracts Made and Pending during Year Commencing February 1, 1903, and ending January 31, 1904. — Concluded.
Contracts marked thus () are completed.*

DATE.	CONTRACTORS.	WORK.	AMOUNT.	PAID ON CONTRACT.		
				Previous Year.	Year 1903-1904.	Total.
1903.						
Mar. 13,	H. P. Nawn.....	Teaming water pipes and materials for year ending January 31, 1904.	{ 23 cents per ton, 2,000 lbs., for short haul..... 80 cents per ton, 2,000 lbs., for for long haul..... }	.....	1,626 87	1,626 87
Mar. 14,	Forboro Foundry Co....	Small iron castings for year ending January 31, 1904.....	{ No. 1. @ 3 ³⁵ / ₁₆ cents per lb..... No. 2, @ 2 ³⁵ / ₁₆} " " " " " " " " }	.....	\$36,078 15	\$36,078 15
" 14,	J. H. McCafferty & Co..	Composition castings for year ending January 31, 1904.....	{ No. 1. @ 20 ¹ / ₂ cents per lb..... No. 2, @ 21 " " " " " " " " " No. 3, @ 15 " " " " " " " " }	.....	5,133 01	5,133 01
Mar. 16,	{ United States Cast Iron Pipe and Foundry Co.	{ 160 tons 36-inch pipe, B. 460 " 16-inch " " B. 1,260 " 12-inch " " B. 350 " 10-inch " " B. 500 " 8-inch " " B. 150 " 6-inch " " B. 20 " 4-inch " " B. 2,900 " straight pipe..... 15 " special castings..... }	{ @ \$29.70 per ton, 2,000 lbs..... " " " " " " " " " " " " " @ 55.00 " " " " " " " " " " " " }	.....	72,624 08	72,624 08
* Apr. 8,	John J. Kelley.....	Blasting, St. Alphonsus street, Roxbury.....	@ \$4.97 per cubic yard.....	.....	31 81	31 81
* May 15,	Thomas Burke.....	Blasting, Normandy street, Dorchester.....	@ \$6.00 per cubic yard.....	.....	69 00	69 00
* July 1,	Boston Ice Co.....	{ Furnishing ice for drinking fountains in South Boston, Roxbury, and West Roxbury..... }	@ \$3.00 per ton, 2,000 lbs.....	†

WATER DEPARTMENT.

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* July 1,	Independent Ice Co.....	{ Furnishing ice for drinking fountains in City Proper, East Boston, and Charles- town..... }	@ \$3.00 per ton, 2,000 lbs.....	†
* Aug. 6,	John T. Cavanagh.....	{ Excavating and back-filling trench for 12- inch main on beach at Long Island..... }	@ \$1.50 per linear foot.....	.....	1,870 50
* " 19,	Thomas Burke.....	Blasting, La Grange street, West Roxbury..	@ \$3.00 per cubic yard.....	.....	356 70
* Sept. 17,	Camden Iron Works.....	{ 300 tons 48-inch pipe B. 370 " 30-inch " B. 300 " 12-inch " B. 350 " 10-inch " B. 1,320 " pipe..... 15 " special castings..... }	@ \$27.40 per ton, 2,000 lbs..... @ \$54.00 " " ".....	.....	15,487 85
Oct. 1,	Thomas Burke... ..	Blasting, La Grange street, West Roxbury..	@ \$3.80 per cubic yard.....	.....	429 07
* " 16,	Thomas Burke.....	Blasting, Glenarm street, Dorchester	@ \$3.47 per cubic yard.....	.....	230 76

† Paid from special appropriation.

REPORT OF INCOME DIVISION.

BOSTON, February 1, 1904.

MR. EUGENE S. SULLIVAN,

Water Commissioner:

DEAR SIR,— Herewith follows the annual report of the Income Division, Water Department. The report of the Meter Service Division covers the financial year ending January 31, 1904; the remainder of the report is rendered for the calendar year ending December 31, 1903—it being impracticable, owing to the nature of our accounts, to render it for the financial year.

Respectfully submitted,

J. H. CALDWELL,

General Superintendent, Income Division.

TABLE I.

Statement of Water Rates, January 1, 1904.

Account of Year.	Amount Assessed.	Amount Abated.	Amount Collected.	Balance Outstanding.
1894.....	\$2,163,625 70	\$51,615 19	\$2,112,006 01	\$4 50
1895.....	2,266,519 08	55,409 79	2,211,008 55	100 75
1896.....	2,568,246 04	* 95,157 39	2,473,083 65	5 00
1897.....	2,630,413 37	53,864 09	2,576,549 28	.....
1898.....	2,342,804 58	† 235,414 43	2,107,390 15	.....
1899.....	2,414,731 72	† 257,930 16	2,156,246 26	555 30
1900.....	2,197,026 64	46,457 05	2,150,124 59	445 00
1901.....	† 2,264,845 26	45,559 17	2,217,869 38	1,416 71
1902.....	† 2,327,899 90	42,674 02	2,283,765 08	1,460 80
1903.....	† 2,384,634 68	32,775 01	2,064,284 83	287,574 84

Above amounts for years 1894, 1895, 1896, and 1897 include both Cochituate and Mystic supply accounts. The contracts to supply Chelsea, Somerville, and Everett with Mystic water were abrogated by the Metropolitan Water Act on January 1, 1898.

* This amount includes certain City Department accounts, abated by order of the Mayor.

† These amounts include abatements of City Department accounts, under order of the City Council, approved by the Mayor on March 5, 1900.

‡ No City Department accounts in these amounts, such charges having been abolished by an order of the City Council, approved by the Mayor on March 5, 1900.

TABLE II.

Number of Classified Water Takers during 1903.

	Number.
By annual rates	95,083
By meter rates	5,132
City supplies of all kinds	9,115
Total	109,330

TABLE III.

Kind and Number of Fixtures in Use December 31, 1903.

	Number.
Bath-tubs	80,681
Bowls	120,380
Foot-tubs	413
Sinks	184,656
Taps	30,419
Urinals, automatic	4,996
" otherwise	520
Wash-tubs	128,924
Water-closets	177,371
Total fixtures	728,360

TABLE IV.

Water at Annual Rates.

CLASSIFICATION.	Number.	Amount.
Armories.....	2	\$40 50
Bakeries.....	281	3,734 00
Bath-houses.....	1	17 00
Building purposes.....	603	8,194 28
Cemeteries.....	5	24 92
Churches.....	246	2,910 25
Cistern filling.....	3	72 68
Clubs.....	208	3,025 63
Depots and stations.....	58	1,276 58
Dispensaries.....	3	44 50
Dwelling-houses.....	54,084	793,575 04
Fountains.....	4	32 00
Freight-houses.....	12	150 00
Greenhouses.....	56	979 83
Gymnasiums.....	4	77 58
Halls.....	135	2,159 29
Hand-hose.....	8,927	44,635 00
Hospitals and asylums.....	55	4,014 75
Hotels.....	1	350 00
Laboratories.....	3	99 00
Laundries.....	473	9,015 81
Libraries and museums.....	6	87 50
Manufactories.....	15	282 17
Model houses.....	14,594	276,035 56
Motors.....	4	20 00
Offices.....	1,783	15,447 64
Photographers.....	42	1,030 75
Puddling trenches.....	14	876 25
Restaurants and lunch rooms.....	488	8,000 90
Rink.....	1	60 13
Saloons.....	509	20,160 59
Schools.....	79	1,359 00
Shops.....	3,068	28,168 84
Street watering.....	9	354 73
Shipping.....	4	95 00
Stables.....	3,150	22,669 53
Steam and gas engines.....	147	1,876 24
Stores.....	6,003	68,766 91
Theatres.....	1	10 00
Towers.....	2	20 00
Totals.....	95,083	\$1,319,750 38

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Table V.

Water at Meter Rates.

CLASSIFICATION.	Number.	Quantity of Water Consumed, Cubic Feet.	Amount Assessed.
Bakeries.....	23	1,742,000	\$2,281 90
Bath-houses.....	9	854,000	1,144 70
Boarding-houses.....	99	6,591,000	8,912 35
Bottling establishments.....	37	2,967,000	3,977 30
Breweries.....	24	22,073,000	27,044 30
Cemeteries.....	4	859,000	1,069 10
Chemicals.....	5	2,078,000	2,579 20
Club-houses.....	39	9,913,000	12,375 20
Distilleries.....	5	1,154,000	1,472 70
Electrical companies.....	8	24,095,000	23,045 60
Elevators and motors.....	503	39,772,000	52,076 76
Factories.....	231	41,945,000	53,825 37
Fish-houses.....	29	1,591,000	2,119 10
Gas-works.....	14	12,405,000	14,554 40
Greenhouses.....	11	795,000	1,038 30
Halls.....	20	1,554,000	2,043 00
Hospitals.....	19	10,311,000	12,471 50
Hotels.....	122	88,772,000	107,460 48
Iron-works.....	34	9,847,000	12,438 10
Laundries.....	58	13,931,000	18,315 45
Markets.....	2	150,000	205 80
Mills and engines.....	80	14,507,000	18,237 02
Model houses.....	1,181	70,911,000	96,565 25
Navy Yard and barracks.....	9	19,699,000	17,704 35
Offices, stores and shops.....	1,614	165,076,000	215,538 05
Oil-works.....	4	343,000	470 10
Public institutions.....	7	18,887,000	22,813 40
Saloons and restaurants.....	356	21,116,000	28,138 50
Schools.....	50	7,083,000	9,152 40
Slaughtering houses.....	3	1,519,000	1,876 90
Stables.....	349	16,148,000	22,224 42
Steam and street railways.....	59	204,180,000	190,377 43
Stone-works.....	7	1,142,000	1,476 90
Sugar refineries.....	1	31,483,000	26,010 40
Tanneries.....	5	366,000	502 30
Theatres.....	18	4,483,000	5,697 00
Warehouses.....	21	8,117,000	9,736 35
Wharves and shipping.....	73	23,583,000	29,542 54
Total.....	5,132	902,042,000	\$1,056,513 92

Table VI.*Number and Amounts of Abatements Allowed during the Year 1903.*

ON ACCOUNT OF ASSESSMENTS FOR YEAR.	Number.	Amount.
1901.....	31	\$295 08
1902.....	2,132	21,909 40
1903.....	3,093	32,775 01
Total.....	5,256	\$54,979 49

Table VII.*New Elevator, Motor, Fire, and Service Pipes.*

Elevator pipes.....	21
Motor pipes.....	7
Fire pipes.....	31
Service pipes.....	993
Total.....	1,022

Table VIII.*Turning Water Off and On.*

For repairs of mains.....	803
For repairs of services.....	3,365
For non-payment of water bills.....	2,007
For waste.....	4
Turned on first time.....	993
Vacancies.....	3,982
Total.....	11,159

Table IX.

Off and On Receipts.

Received for turning water off and on for repairs—deposited with City Collector.....	\$1,667 50
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Table X.

ELEVATOR, MOTOR, AND FIRE PIPE SERVICE, FOR THE YEAR
ENDING DECEMBER 31, 1903.*Elevators.*

Under supervision December 31, 1902	578	
Discontinued during the year	7	
Changed to electric	5	
	— 12	
		566
New elevators inspected and accepted during the year		22
		<u>588</u>
Under supervision December 31, 1903		588
Changed to tank and metered water, and still under supervision		53
Inspections made		440
Accuracy tests made		233
Registering inaccurately and repaired by owners		67
Wasting water and repaired by owners		20
Clock cord broken and repaired by owners		17
Clock hands off, or glass broken, and repaired by owners		23

Motors.

Under supervision December 31, 1902	129	
Discontinued	2	
Placed on meter	3	
Changed to electric	2	
	— 7	
		122
New motors added to service during the year		8
		<u>130</u>
Under supervision December 31, 1903		130
Motors on meter		16
Inspections made		83
Measured		8
Tested		42
Registering inaccurately and repaired by owners		7
Not registering and repaired by owners		5
Wasting water and repaired by owners		8

Fire Service.

Premises under supervision December 31, 1902	459	
Supervision discontinued	7	
		452
Premises equipped during the year		22
		<u>474</u>
Premises under supervision December 31, 1903		474

Inspection of premises	3,225
Total number of inspections of outlet valves	34,642
Total number of inspections of hydrant inspections	738
Total number of valves sealed and resealed	2,958
Total number of hydrant valves sealed and resealed	128

By-passes.

Meter by-passes under supervision December 31, 1902	40
Discontinued	2
	38
By-passes, additional	8
	41
Under supervision December 31, 1903	41
Inspections made	192
Resealed	14

Table XI.**WASTE DETECTION.***Water Inspection.*

	Number.
Waste reports.....	12,715
First examinations.....	12,715
Second examinations.....	12,233
Third examinations.....	2,679
Fourth examinations.....	323
Fine notices issued.....	51

Table XII.*Defective Fixtures and Waste.*

	Number.
Tank fixtures leaking.....	11,202
Faucets leaking.....	5,164
Bursts.....	456
Water-closets leaking.....	299
Willful waste.....	22

Table XIII.**METER SERVICE.***Statement of Meters for Year Ending January 31, 1904.*

Meters belonging to department January 31, 1903	5,189
Purchased during the year	161
Found in service	1
	<u>5,351</u>
Condemned during year	66
Lost in service	4
	<u>70</u>
Meters belonging to department January 31, 1904	<u>5,281</u>

Table XIV.*Distribution of Meters January 31, 1904.*

In service	4,727
At department shop	554
	<u>5,281</u>

Table XV.*General Statement of Work Performed on Meters During Year Ending January 31, 1904.*

	Meters.	Boxes.
Applied.....	288	63
Discontinued	188	.....
Changed	683	.....
Changed location.....	14	.....
Tested.....	1,707	.....
Repaired at shop.....	708	.....
Repaired at factory.....	56	.....
Repaired in service.....	262	235
Abandoned.....	.....	12
Examined	385	.....
Hayed.....	1,493	.....
Condemned.....	66	.....
Purchased.....	161	.....
Meters in service.....	4,727	.....
Private meters applied.....	8	.....
Private meters in service.....	50	.....
Meters at department shop.....	554	.....

Table XVI.
Meters Applied.

	DIAMETER IN INCHES.								Totals.
	6	4	3	2	1½	1	¾	⅝	
Crown.....		1	3	4	7	14	36	71	136
Worthington			1	7	1	12	14	.....	35
Hersey	4	1	3	16	11	25	36	1	97
Metropolitan.....					1	.....	11	.....	12
Nash.....							2	.....	2
Disc					2	1	.....	.....	3
B. W. W.....							2	.....	2
Lambert.....							1	.....	1
Totals.....	4	2	7	27	22	52	102	72	288

Table XVII.
Meters Discontinued.

	DIAMETER IN INCHES.							Totals.
	4	3	2	1½	1	¾	⅝	
Crown.....	1	5	4	5	13	24	43	95
Worthington		1	2	5	18	9	.....	35
Hersey	1	.....	5	2	5	2	.....	15
Metropolitan.....				2	3	31	.....	36
B. W. W.....						5	.....	5
Empire.....					1	.....	.....	1
Disc.....					1	.....	.....	1
Totals.....	2	6	11	14	41	71	43	188

Table XVIII.
Meters Purchased.

	DIAMETER IN INCHES.							Totals.
	6	4	3	2	1½	1	¾	
Hersey	5	3	11	24	32	42	36	153
Crown		1					7	8
Totals	5	4	11	24	32	42	43	161

Table XIX.
Meters Repaired at Factory.

	DIAMETER IN INCHES.						Totals.
	4	3	2	1½	1	¾	
Worthington					14	12	26
Crown		2	3	1	6	6	18
Lambert					1		1
Nash					2		2
Disc				2			2
Hersey	1			1		5	7
Totals	1	2	3	4	23	23	56

Table XX.
Meters Condemned.

	DIAMETER IN INCHES.				Totals.
	2	1	¾	½	
Metropolitan		2	30	1	33
Worthington	3	15	11		29
B. W. W.			3		3
Crown			1		1
Totals	3	17	45	1	66

Table XXI.

Meters Repaired in Service.

CAUSE OF REPAIRS.	Number.	CAUSE OF REPAIRS.	Number.
Clock broken.....	35	<i>Brought forward.....</i>	224
Ratchet broken.....	5	Hands broken.....	9
Glass broken.....	22	Body leak.....	2
Cover broken.....	27	Defaced.....	10
Coupling leak.....	38	Gasket.....	1
Spindle leak.....	55	Pawl stuck.....	6
Valve leak.....	8	Rust.....	1
Gear loose.....	12	Stop cock leak.....	2
Clock bound.....	12	Spindle broken.....	5
Did not mesh.....	4	Intermediate worn.....	2
Irregular registration.....	11		
<i>Carried forward.....</i>	224	<i>Total.....</i>	282

Table XXII.

Meters Changed.

CAUSE.	Number.	CAUSE.	Number.
For test.....	183	<i>Brought forward.....</i>	513
Irregular registration.....	118	Gear broken.....	44
Stoppage.....	20	Gear worn.....	3
No force.....	38	Did not mesh.....	34
Frost.....	41	Enlargement.....	27
Solder.....	13	Ratchet broken.....	8
Gravel.....	10	Rust.....	21
Heat.....	6	Spindle broken.....	5
Leak at body.....	10	Shaft broken.....	6
Leak at spindle.....	8	Cover broken.....	3
Clock broken.....	26	Clock bound.....	5
Piston bound.....	14	Bar worn.....	3
Piston broken.....	14	Relocate.....	8
Gear bound.....	12	Valve broken.....	2
<i>Carried forward.....</i>	513	<i>Total.....</i>	682

Table XXIII.

Meters in Service January 31, 1904.

	DIAMETER IN INCHES.								Totals.
	6	4	3	2	1½	1	¾	½	
Worthington.....	2	17	31	139	121	491	330	1	1,132
Crown.....	10	45	51	82	166	375	450	1,218	2,397
Metropolitan.....				1	19	88	460	2	570
Hersey.....	6	6	17	52	76	132	212	20	521
B. W. W.....							35		35
Lambert.....				2	3	2	4	3	14
Thomson.....							1	2	3
Disc.....			6	5	13	1			24
Nash.....			3		1	2	2	1	9
Empire.....					6	5	2		13
Gem.....	1	4							5
Trident.....						2			2
Torrent.....	1								1
Ball & Fitts.....		1							1
Totals.....	20	72	109	281	404	1,098	1,496	1,247	4,727

Table XXIV.

Private Meters Set.

	DIAMETER IN INCHES.					Totals.
	6	1½	1	¾	½	
Crown.....	1	1	1			3

Table XXV.*Private Meters in Service.*

	DIAMETER IN INCHES.								Totals
	6	4	3	2	1½	1	¾	½	
Crown.....	3	2	2	5	10	4	2	5	33
Worthington.....			2	5		3		2	12
Hersey.....			1	1					2
Gem.....	2								2
B. W. W.....							1		1
Totals.....	5	2	5	11	10	7	3	7	50

Table XXVI.*Meters at Department Shop January 31, 1904.*

	DIAMETER IN INCHES.								Totals.
	6	4	3	2	1½	1	¾	½	
Worthington.....		4	2	10	6	63	63	6	154
Crown.....		1	4	4	4	5	29	105	152
Hersey.....	1	4	6	5	9	3	9		37
Metropolitan.....				3	1	42	139		185
Lambert.....								3	3
Thomson.....							1	4	5
Gem.....	1	1	4	2					8
Empire.....					1				1
Ball & Fitts.....				1			1		2
Nash.....								1	1
B. W. W.....							2		2
Champion.....							1		1
Rogers.....							1		1
Disc.....					1	1			2
Totals.....	2	10	16	25	22	114	246	119	554

Meters Belonging to Department January 31, 1904.

Hersey,	$\frac{1}{2}$ -inch .	20	Thomson,	$\frac{1}{2}$ -inch .	6
"	$\frac{1}{2}$ " .	221	"	$\frac{1}{2}$ " .	2
"	1 " .	135			8
"	$1\frac{1}{2}$ " .	85	Gem,	2 " .	2
"	2 " .	57	"	3 " .	4
"	3 " .	23	"	4 " .	5
"	4 " .	10	"	6 " .	2
"	6 " .	7			13
		558	Trident,	1 " .	2
Crown,	$\frac{1}{2}$ " .	1,323	Empire,	$\frac{1}{2}$ " .	2
"	$\frac{1}{2}$ " .	479	"	1 " .	5
"	1 " .	380	"	$1\frac{1}{2}$ " .	7
"	$1\frac{1}{2}$ " .	170			14
"	2 " .	86	Nash,	$\frac{1}{2}$ " .	2
"	3 " .	55	"	$\frac{1}{2}$ " .	2
"	4 " .	46	"	1 " .	2
"	6 " .	10	"	$1\frac{1}{2}$ " .	1
		2,549	"	3 " .	3
Worthington,	$\frac{1}{2}$ " .	7			10
"	$\frac{1}{2}$ " .	393	Disc,	1 " .	2
"	1 " .	554	"	$1\frac{1}{2}$ " .	13
"	$1\frac{1}{2}$ " .	127	"	2 " .	5
"	2 " .	149	"	3 " .	6
"	3 " .	33			26
"	4 " .	21	Ball & Fitts,	$\frac{1}{2}$ " .	1
"	6 " .	2	"	2 " .	1
		1,286	"	3 " .	1
B. W. W.,	$\frac{1}{2}$ " .	37			3
Metropolitan	$\frac{1}{2}$ " .	2	Torrent,	6 " .	1
"	$\frac{1}{2}$ " .	599	Champion,	$\frac{1}{2}$ " .	1
"	1 " .	130	Rogers,	$\frac{1}{2}$ " .	1
"	$1\frac{1}{2}$ " .	20			5,281
"	2 " .	4			
		755			
Lambert,	$\frac{1}{2}$ " .	6			
"	$\frac{1}{2}$ " .	4			
"	1 " .	2			
"	$1\frac{1}{2}$ " .	3			
"	2 " .	2			
		17			

REPORT OF THE DISTRIBUTION DIVISION.

OFFICE OF THE SUPERINTENDENT,
710 ALBANY STREET, February 1, 1904.

EUGENE S. SULLIVAN, ESQ.,

Water Commissioner:

SIR,— I herewith submit in tabular form the annual report of the Distribution Division for the year ending January 31, 1904.

Respectfully yours,

WILLIAM J. WELCH,

Superintendent.

**Statement of Location, Size, and Number of Feet of Main Pipe
Extended during the Year ending January 31, 1904.**

NOTE.—C. P. indicates City Proper; Rox., Roxbury; W. R., West Roxbury; Bri., Brighton; Dor., Dorchester; So. B., South Boston; E. B., East Boston; Chsn., Charlestown; B. H., Boston Harbor.

LOCATION.		District.	High or Low Service.	Size.	Length.
Washington st....	Between Burt and Codman sts.....	Dor.	H.	30-in.	928
Haven ave.....	From Blue Hill ave.....	"	H.	16-in.	209
Massachusetts ave.	Between Clapp st. and railroad bridge.....	"	L.	"	231
A st.....	Between private way (natural continuation of Mt. Washington ave.) and Wormwood st.....	So. B.	L.	"	512
"	Between Wormwood and Congress sts.....	"	L.	"	1,065
Melcher st.....	Between A and Summer sts.....	"	L.	"	228
Private way (natural continuation of Mt. Washington ave.)	" Granite and A sts.....	"	L.	"	360
Mason st.....	At Bow st.....	Chsn.	L.	"	20
School st.....	Between High and Summer sts.....	"	L.	"	186
Wapping st.....	At Navy Yard.....	"	L.	"	9
Total, 16-inch.....					2,820

Statement of Main Pipe Extended.—Continued.

LOCATION.		District.	High or Low Service.	Size.	Length.
Board of Survey Street No. 713....	Between Southampton and Leatherbee sts.....	Rox.	L.	12-in.	576
Ritchie st.....	Between Columbus ave. and Marcella st.....	"	H.	"	493
La Grange st.....	From Martin st.....	W. R.	H.	"	240
"	Between Washington and Swallow sts.....	"	H.	"	1,098
Weld st.....	At Walter st.....	"	H.	"	38
Wallingford road.	Between Leamington road and Chestnut Hill ave.....	Brl.	H.	"	630
Blue Hill ave.....	Opposite Rockville st. (connection between 12-inch and 6-inch).....	Dor.	H.	"	30
Columbia road....	Between Moseley and Dorchester avcs.	"	L.	"	369
Geneva ave.....	Between Everton and Olney sts.....	"	H.	"	120
Greenock st.....	" Blue Hill ave. and Harvard st.....	"	H.	"	690
Kilton st.....	" Harvard and Athelwold sts.....	"	H.	"	287
Mt. Vernon st.....	At Shoreham st.....	"	L.	"	55
"	Between Shoreham st. and Old Colony ave.	"	L.	"	193
Normandy st.....	Between Columbia road and Seaver st.....	"	H.	"	48
Old Colony ave....	At Mt. Vernon st., under Columbia road bridge.....	"	L.	"	180
Roseclair st.....	From Boston st.....	"	L.	"	170
"	Between Boston and Greenhalge sts.	"	L.	"	501
Shoreham st.....	" Carson and Mt. Vernon sts.	"	L.	"	27
A st.....	" Binford and Wormwood sts. (connection between 12-inch and 6-inch).....	So. B.	L.	"	17
Binford st.....	" A st. and passageway.....	"	L.	"	300
C st.....	" First and Anchor sts.....	"	L.	"	869
Columbia road....	" Champney and Hyde sts....	"	L.	"	564
Old Colony ave....	At Hyde st. and Columbia road.....	"	L.	"	20
Passageway.....	Between Binford and Wormwood sts.....	"	L.	"	271
Pittsburg st.....	Between Congress st. and railroad tracks.....	"	L.	"	700
Private way.....	Off A st., between Melcher and Congress sts.....	"	L.	"	10
Bennington st.....	Between Walley st. and Leverett ave.	E. B.	L.	"	187
Carried forward.....					8,683

Statement of Main Pipe Extended.— Continued.

LOCATION.		District.	High or Low Service.	Size.	Length.
<i>Brought forward</i>					8,683
Bennington st. (north side).....	At Saratoga st.....	E. B.	L.	12-in.	26
Boardman st.....	" Ford st.....	"	L.	"	7
Overlook st.....	" Waldemar ave.....	"	H.	"	156
Saratoga st.....	Between Ford st. and B., R. B. & L. R.R.....	"	L.	"	285
Long Island	South from connection between 12- inch and 8-inch lines, opposite Rainsford Island.....	B. H.	H.	"	3,338
Total, 12-inch.....					<u>12,496</u>
Carleton st.....	Bet. Berwick park and Yarmouth st..	C. P.	L.	10-in.	816
St. Botolph st.....	At south side of Gainsboro st.....	Rox.	L.	"	19
"	South from Gainsboro st.....	"	L.	"	72
Mendum st.....	At Walter st.....	W. R.	H.	"	20
Speedway.....	From Telford st.....	Bri.	L.	"	991
Alpha road	Between Park and Waldeck sts.....	Dor.	H.	"	2
Florida st.....	" Ashmont and Templeton sts.	"	H.	"	711
Johnston road	" Blue Hill ave. and Harvard st.....	"	H.	"	426
Tonawanda st.....	" Claybourne and Greenbrier sts.	"	H.	"	30
Pittsburg st.....	" Congress st. and railroad tracks.....	So. B.	L.	"	9
Third st.....	At O st. (between 20-inch and 10-inch mains).....	"	L.	"	11
Saratoga st.....	At Bennington st. (connection be- tween 12-inch and 10-inch).....	E. B.	L.	"	20
Total, 10 inch.....					<u>3,127</u>
Blanford st.....	Between Commonwealth ave. and B. & A. R. R.....	C. P.	L.	8-in.	263
Congress st.....	Bet. Post Office ave. and Water st....	"	H.	"	274
Court st. (north side).....	" Cornhill and Franklin ave.....	"	H.	"	3
Cummington st....	At Blandford st.....	"	L.	"	31
"	Between Blandford and Lawton sts.	"	L.	"	1,175
Exchange pl.	From Congress st.....	"	H.	"	133
Hale st.....	" South Margin st.	"	L.	"	152
Post Office sq. (east side).....	Between Water and Bath sts.....	"	H.	"	86
*State st.....	" Exchange st. and Change ave...	"	H.	"	33
<i>Carried forward</i>					2,150

*Dead.

Statement of Main Pipe Extended.—*Continued.*

LOCATION.		District.	High or Low Service.	Size.	Length.
	<i>Brought forward</i>				2,150
Water st.....	Bet. Congress and Devonshire sts...	C. P.	H.	8-in.	31
West Canton st....	At Carleton st.....	"	L.	"	15
Randall st.	" west side of Fellows st.....	Rox.	L.	"	32
Cleaves st.....	Off Columbus ave.....	W. R.	H.	"	242
Dalrymple st.....	Bet. Egleston and Georgiana sts....	"	H.	"	170
Fresno st.....	" Dudley ave. and Alder st.....	"	H.	"	55
Grove st.....	" Washington and Stimson sts....	"	H.	"	514
Irving st.....	" Pelton st. and end of street.....	"	H.	"	298
Jewett st.....	" Neponset ave. and Folsom sts..	"	H.	"	225
Johnswood road..	From Prospect ave.....	"	H.	"	306
" ..	" "	"	H.	"	62
Malcolm st.....	" Belgrade ave.....	"	H.	"	56
Pleasant ave.....	" Pleasant st.....	"	H.	"	161
Rowe st.....	Off Brown ave.....	"	H.	"	276
Summer st.....	Between Powell and Cass sts.....	"	H.	"	145
Champney st.....	At Stratton st.....	Bri.	H.	"	3
Smith st.....	Easterly from unnamed street.....	"	L.	"	229
Stratton st.....	Between Bigelow and Atkins sts....	"	H.	"	439
Alpha road.....	" Park and Waldeck sts.....	Dor.	H.	"	547
Blue Hill ave.....	Opposite Almont st. (connection between 6-inch and 16-inch)	"	H.	"	7
Brenton st.....	Off Glenway st.....	"	H.	"	197
Centre st.....	Between Elm lawn and Leslie st....	"	H.	"	306
Columbia ave....	Off Mt. Vernon st.....	"	L.	"	241
Elder st.....	Between Columbia road and Humphreys st.....	"	L.	"	208
Lafield st.....	Off Centre st.....	"	H.	"	3
Millett st.....	Between Faxon and Harvard sts....	"	H.	"	156
Proposed st.....	Off Alpha road	"	H.	"	3
St. Margaret st...	Between Roseclair and Boston sts..	"	L.	"	368
Shoreham st.....	" Carson and Mt. Vernon sts.,	"	L.	"	238
Toklo st.....	" River st. and Edgewater drive.....	"	H.	"	435
Anchor st.....	At C st.....	So. B.	L.	"	7
Bowen st.....	Between E and F sts.....	"	L.	"	359
Cypher st.....	At C st.....	"	L.	"	7
	<i>Carried forward</i>				8,492

Statement of Main Pipe Extended.—Continued.

LOCATION.		District.	High or Low Service.	Size.	Length.
	<i>Brought forward</i>				8,492
Hyde st.....	At Old Colony ave. and Columbia road.....	So. B.	L.	8 in.	9
Swallow st.....	" O st.....	"	L.	"	26
"	Between O and N sts.....	"	L.	"	117
Arlington ave.....	West from Fred st.....	Chan.	L.	"	87
Hamblen st.....	Bet. Arlington ave. and George sts..	"	L.	"	336
Jenner st.....	At Bow st.....	"	L.	"	18
Monument ave....	Bet. Main and Warren sts.....	"	L.	"	202
Austin ave.....	" Baywater and Saratoga sts...	E. B.	L.	"	447
Trumbull st.....	Across Bennington st.....	"	L.	"	33
	Total, 8 inch.....				9,767
Blandford st.....	Between Commonwealth ave. and B. & A. R. R.....	C. P.	L.	6 in.	101
Court st. (north side)	Between Franklin ave. and Cornhill.	"	H.	"	154
Court st. (north side)	" Cornhill and Franklin ave.	"	H.	"	8
Eastern ave.....	At Commercial st.....	"	L.	"	45
Holyoke st.....	" Carleton st.....	"	L.	"	11
Knapp st.....	Off Beach st.....	"	H.	"	139
Water st.....	Between Congress and Devonshire sts.	"	H.	"	143
Yarmouth st.....	At Carleton st.....	"	L.	"	20
Pike st.....	" Fellows st.....	Rox.	L.	"	24
Arden st.....	Between Coolidge and Hooker sts...	Bri.	L.	"	200
Bagnal st.....	" Aldie and Holton sts.....	"	L.	"	39
Duck lane.....	" Smith and North Harvard sts.....	"	L.	"	28
Telford st.....	At Speedway.....	"	L.	"	31
Argyle st.....	Between Talbot and Welles aves....	Dor.	L.	"	176
Claybourne st....	" Dakota and Tonawanda sts..	"	H.	"	84
"	" Park and Tonawanda sts....	"	H.	"	216
Greenhalge st....	At Roseclair st.....	"	L.	"	15
Howe st.....	Off Hancock st.....	"	H.	"	130
Lombard way....	Between Dorchester ave. and Auckland st.....	"	L.	"	339
Millett st.....	Between Talbot and Southern aves..	"	H.	"	441
Norwood st.....	Junction of Tolman st.....	"	L.	"	33
	<i>Carried forward</i>				2,877

Statement of Main Pipe Extended.—*Concluded.*

LOCATION.		District.	High or Low Service.	Size.	Length.
	<i>Brought forward</i>				2,377
Shoreham st.....	Between Carson and Mt. Vernon sts.	Dor.	L.	6-in.	7
Champney ct.....	Off Champney st.....	So. B.	L.	"	88
Seventh st....	At O st.....	"	L.	"	34
Arlington ave....	Between Dorrance and Hamblen sts.	Chsn.	L.	"	183
Benedict st.....	At Rutherford ave.....	"	L.	"	33
Gilbert ave.....	Off Hamblen st.....	"	L.	"	24
Hamblen st.....	Bet. Arlington ave. and George st..	"	L.	"	3
Sprague st.....	" Princeton and Bunker Hill sts..	"	L.	"	87
Bennington st. (south side).....	" West and Saratoga sts.....	E. B.	L.	"	1,388
Bennington st....	" Walley st. and Leverett ave...	"	L.	"	46
Sea View ave.....	From Orient ave.....	"	H.	"	306
Wordsworth st...	Between Bennington st. and B., R.B. & L. R.R.....	"	L.	"	72
Long Island.....	Southern end of island (connection between 12-inch and 6-inch lines)..	B. H.	H.	"	20
"	Southern end of island (connection between 6-inch line on Long Island and Moon Island).....	"	H.	"	15
	Total, 6-inch.....				4,683
Pond Street pl....	Off Endicott st.....	C. P.	L.	4-in.	108

Statement of Location, Size, and Number of Feet of Main Pipe Relaid during the Year ending January 31, 1904, and the Former Size of Same.

LOCATION.		District.	High or Low Service.	Size.	Length.	Former Size.
Brookline ave.....	Between Bellevue st. and B. & A. R.R.....	C. P.	L.	40-in.	594	40-in.
Tremont st.....	Between Massachusetts ave. and Rutland st.....	"	L.	30-in.	941	30-in.
* Tremont st.....	Between Massachusetts ave. and Northampton st.....	"	L.	"	143	"
	Total, 30-inch.....				1,064	

* Dead.

Statement of Main Pipe Relaid.—Continued.

LOCATION.		District.	High or Low Service.	Size.	Length.	Former Size.
Fourth st.....	Between Dorchester ave. and Fort Point Channel.....	So. B.	L.	20-in.	837	20-in.
Atlantic ave.....	At State st.....	C. P.	L.	16-in.	72	16-in.
Commercial st.....	" Eastern ave.....	"	L.	"	91	"
Court st.....	Between Tremont st. and Court sq. (East).....	"	H.	"	258	12 & 16-in.
"	At Scollay Square (across the street from new 16-inch to 12-inch at Cornhill).....	"	H.	"	89	16-in.
State st.....	" Devonshire st.....	"	L.	"	12	"
"	" Exchange st.....	"	L.	"	25	"
Harrison ave.....	Between Zelgler and Dudley sts.	Rox.	L.	"	233	6-in.
Blue Hill ave.....	At Haven ave. (over N.Y., N.H. & H. R.R.).....	Dor.	H.	"	195	12-in.
Blnford st.....	Across A st., between 12-inch and 16-inch mains	So. B.	L.	"	5	16-in.
Bow st.....	Between Harvard and Washington sts.....	Chsn.	L.	"	208	6-in. 8-in. 16-in.
Wapping st.....	Between Chelsea and Water sts.	"	L.	"	451	6-in.
Total, 16-inch.....					1,584	
Cambridge st.....	Bet. Charles and Hancock sts...	C. P.	L.	12-in.	1,676	12-in.
"	" Hancock st. and Bowdoin sq.....	"	H.	"	551	6-in.
Congress st.....	At State st.....	"	H.	"	82	8-in.
Corning st.....	" West side, Shawmut ave.....	"	L.	"	20	6-in.
"	" East side, Shawmut ave.....	"	L.	"	45	"
Franklin st.....	Between Pearl and India sts...	"	L.	"	971	6 & 8-in.
Friend st.....	Across Sudbury st.....	"	L.	"	45	6-in.
India st.....	Between State and Central sts...	"	L.	"	143	"
Newbury st.....	Across Dartmouth st.....	"	L.	"	104	"
St. James ave.....	Between Clarendon and Dartmouth sts.....	"	H.	"	591	6 & 8-in.
"	Between Berkeley and Clarendon sts.....	"	L.	"	610	6-in.
Shawmut ave.....	Bet. Cherry and Warrenton sts..	"	L.	"	890	"
State st.....	Near Congress st.....	"	H.	"	13	12-in.
"	Between Washington and Congress sts.....	"	H.	"	241	8-in.
Carried forward.....					5,932	

Statement of Main Pipe Relaid. — *Continued.*

LOCATION.		District.	High or Low Service.	Size.	Length.	Former Size.
	<i>Brought forward</i>				5,982	
Sudbury st.....	Bet. Merrimac and Court sts....	C. P.	L.	12-in.	678	6 & 8-in.
West Newton st..	" Columbus ave. and Tremont st.....	"	L.	"	874	6-in.
Worcester st.....	" Columbus ave. and Tremont st.....	"	L.	"	727	"
East Lenox st....	At Fellows st.....	Rox.	L.	"	28	"
Hunneman st.....	Between Harrison ave. and Albany st.....	"	L.	"	385	12-in.
Roxbury st.	Between Shawmut ave. and Putnam pl.....	"	L.	"	622	6-in.
St. Alphonsus st...	Between Smith and Tremont sts.	"	L.	"	288	12-in.
Vancouver st.....	Across Huntington ave.....	"	L.	"	91	"
Centre st.....	Between Pond st. and Grovenor road.....	W. R.	H.	"	102	"
Proctor st.....	At Walter st.....	"	H.	"	29	8-in.
South st.....	Opp. Bussey College entrance...	"	H.	"	8	12-in.
Walter st.....	Between Weld and Mendum sts.	"	H.	"	227	8-in.
"	" Weld and Proctor sts...	"	H.	"	829	"
Weld st.....	At Walter st.....	"	H.	"	51	12-in.
Blue Hill av.....	Opp. Norfolk st. (connection between 12-inch and 16-inch)...	Dor.	H.	"	7	6-in.
Clayton st.....	At Park st.....	"	L.	"	36	"
Crescent ave.....	Between Dorchester ave. and Sydney st.....	"	L.	"	1,157	"
Fremont st.....	From Blue Hill ave.....	"	H.	"	14	12-in.
Glenway st.....	Between Nos. 60 and 64.....	"	H.	"	7	"
Harvard st.....	At Greenock st.....	"	H.	"	4	8-in.
"	Between Blue Hill ave. and Wales st.....	"	H.	"	790	12-in.
Moseley st.....	At Crescent ave.....	"	L.	"	34	6-in.
Park st.....	Bet. Freeport and Adams sts...	"	L.	"	1,745	"
Sydney st.....	At Crescent ave.....	"	L.	"	14	12-in.
A st.....	At Private way (natural continuation of Mt. Washington ave., between Granite and A sts.).....	So. B.	L.	"	13	"
C st.....	" West First st., south of Branch st.....	"	L.	"	25	6-in.
Columbia road....	Between Newman and Preble sts.	"	L.	"	302	"
Dorchester ave....	" Fourth and Fifth sts...	"	H.	"	319	12-in.
	<i>Carried forward</i>				15,338	

Statement of Main Pipe Relaid. — *Continued.*

LOCATION.		District.	High or Low Service.	Size.	Length.	Former Size.
	<i>Brought forward.....</i>				15,338	
Dorchester st.....	At Vale st.....	So. B.	H.	12-in.	16	16-in.
"	" Jenkins st.....	"	H.	"	14	"
Foundry st.....	Under Fourth-st. bridge.....	"	L.	"	6	12-in.
Fourth st.....	Between Dorchester ave. and Fort Point channel.....	"	H.	"	868	"
Wapping st.....	Between Chelsea and Water sts.	Chsn.	L.	"	30	6-in.
Bennington st.....	" Walley st. and Leverett ave.....	E. B.	L.	"	402	6 & 12-in.
Bremen st.....	At Porter st.....	"	L.	"	50	10-in.
Cottage st.....	Bet. Maverick and Everett sts...	"	L.	"	231	12-in.
Ford st.....	" Bennington and Boardman sts.....	"	L.	"	28	"
Overlook st.....	At Waldemar ave.....	"	H.	"	6	"
Porter st.....	Bet. Chelsea and Bremen sts.....	"	L.	"	205	6-in.
	Total, 12-inch.....				17,194	
Anderson st.....	At Cambridge st.....	C. P.	L.	10-in.	16	6-in.
Batterymarch st..	Across Franklin st.....	"	L.	"	53	"
Beverly st.....	Between Causeway and Washington sts.....	"	L.	"	693	"
Bowdoin st.....	At Cambridge st.....	"	H.	"	12	"
Bowker st.....	" Sudbury st.....	"	L.	"	22	"
Camden st.....	Bet. Washington and Watson sts.	"	L.	"	1,978	"
Carver st.....	" Boylston and Elliot sts.....	"	L.	"	400	"
"	" Elliot and Pleasant sts.....	"	L.	"	726	"
Chambers st.....	At Cambridge st.....	"	L.	"	40	"
Clarendon st.....	Across St. James ave.....	"	L.	"	64	"
Dartmouth st.....	Bet. Beacon and Boylston sts....	"	L.	"	1,092	"
East Concord st...	Bet. Harrison ave. and Albany st.	"	L.	"	722	"
Harrison ave.....	" Essex st. and Hayward pl..	"	H.	"	96	"
Massachusetts ave. (north side).....	" Columbus ave. and N.Y., N.H. & H. R.R.	"	L.	"	502	"
No. Anderson st...	At Cambridge st.....	"	L.	"	39	"
No. Russell st.....	" "	"	L.	"	38	8-in.
Portland st.....	Across Sudbury st.....	"	L.	"	53	"
Randolph st.....	Bet. Albany st. and Harrison ave.	"	L.	"	408	6-in.
	<i>Carried forward.....</i>				6,954	

Statement of Main Pipe Relaid.—Continued.

LOCATION.		District.	High or Low Service.	Size.	Length.	Former Size.
	<i>Brought forward.</i>				6,954	
So. Russell st.....	At Cambridge st.....	C. P.	L.	10-in.	24	6-in.
Trinity pl.....	" St. James ave.....	"	H.	"	13	"
West Cedar st.....	From Cambridge st.....	"	L.	"	120	"
West Dedham st..	Between Washington st. and Shawmut ave.....	"	L.	"	298	"
W. Springfield st.	Between Columbus ave. and Tremont st.....	"	L.	"	705	"
St. Botolph st.....	At North side of Gainsboro st..	Rox.	L.	"	89	"
Brown ave.....	" Garden st.....	W. R.	H.	"	8	8-in.
Beach st.....	" Park st.....	Dor.	L.	"	87	6-in.
Carson st.....	" Crescent ave.....	"	L.	"	30	"
Exchange st.....	" Park st.....	"	L.	"	30	"
Wales st.....	Across Harvard st.....	"	H.	"	46	"
Bowen st.....	Between E and F sts.....	So. B.	L.	"	8	"
First st	At C st.....	"	L.	"	53	6 & 8-in.
"	Between Dorchester ave. and Granite st.....	"	L.	"	721	6-in.
Midway st.....	At Binford st.....	"	L.	"	5	10-in.
Ninth st.....	" Dorchester st.....	"	L.	"	57	"
O st.....	First st. and Columbia road....	"	L.	"	2,340	6-in.
Sixth st.....	At O st.....	"	L.	"	3	"
Beach st.....	Off Medford st.....	Chan.	L.	"	372	4-in.
Paris st.....	Bet. Meridian and Gove sts.....	E. B.	L.	"	467	6-in.
	Total, 10-inch.....				12,530	
Blandford st.....	Between Commonwealth ave. and B. & A. R.R.....	C. P.	L.	8-in.	12	6-in.
Cambridge st.....	Across westerly side of Charles st., bet. Charles st. and Charles river..	"	L.	"	36	12-in.
Central st.....	At India st.....	"	L.	"	3	8-in.
Charlesgate East..	Bet. Beacon and Marlboro sts...	"	L.	"	182	"
Cobb st.....	At Shawmut ave.....	"	L.	"	42	6-in.
Commonwealth ave. (north side).	Across Dartmouth st.....	"	L.	"	116	"
Commonwealth ave. (south side).	"	"	L.	"	106	"
Congress st.....	At State st.....	"	H.	"	6	8-in.
Court sq. (west side).....	" Court st.....	"	H.	"	17	6-in.
	<i>Carried forward.</i>				520	

Statement of Main Pipe Relaid. — *Continued.*

LOCATION.		District.	High or Low Service.	Size.	Length.	Former Size.
	<i>Brought forward..</i>				520	
Court st.....	At Franklin ave. and Court sq. east (connection between 16-inch and 6-inch).....	C. P.	H.	8-in.	24	8-in.
Devonshire st.....	At State st.....	"	H.	"	14	6-in.
Franklin ave.....	Across Court st.....	"	H.	"	34	4 and 8-in.
Garden st.....	At Cambridge st.....	"	L.	"	20	6-in.
Grove st.....	" "	"	L.	"	23	"
Hale st.....	From Green st.....	"	L.	"	324	4-in.
Hanson st.....	From Shawmut ave.....	"	L.	"	190	6-in.
Hayward pl.....	At Harrison ave.....	"	H.	"	39	"
Irving st.....	" Cambridge st.....	"	L.	"	33	"
Joy st.....	" "	"	L.	"	14	"
Mass. ave. (south side).....	" Columbus ave.....	"	L.	"	60	"
Northfield st.....	" Camden st.....	"	L.	"	18	"
North Grove st....	" Cambridge st.....	"	L.	"	39	"
Shawmut ave.....	Bet. Cherry and Warrenton sts..	"	L.	"	219	"
Temple st.....	At Cambridge st.....	"	H.	"	8	"
Union Park st.....	" Albany st.....	"	L.	"	12	"
Watson st.....	" Camden st.....	"	L.	"	33	"
Wheeler st.....	" Shawmut ave.....	"	L.	"	29	"
Fellows st.....	Between Hunneman and Northampton sts.....	Rox.	L.	"	1,092	"
Harrison ave.....	At south side of Dudley st.....	"	L.	"	45	4-in.
Huntington ave...	" Vancouver st.....	"	L.	"	43	8-in.
Marlboro st.....	Between Massachusetts ave. and Charlesgate east.....	"	L.	"	646	6-in.
Randall st.....	At east side of Fellows st.....	"	L.	"	8	8-in.
Fresno st.....	Bet. Dudley ave. and Alder st...	W. R.	H.	"	3	6-in.
Haverford st. (formerly Argyle st.)	From Cornwall st.....	"	H.	"	196	"
Jones st.....	At Walter st.....	"	H.	"	31	"
St. John st.....	" Centre st.....	"	H.	"	7	8-in.
Walter st.....	Bet. Weld and Proctor sts.....	"	H.	"	45	"
Smith st.....	Easterly from unnamed st.....	Bri.	L.	"	9	6-in.
Abbott st.....	At Harvard st.....	Dor.	H.	"	18	"
Ashland st.....	" Park st.....	"	L.	"	16	"
	<i>Carried forward..</i>				3,812	

Statement of Main Pipe Relaid.—Continued.

LOCATION.		District.	High or Low Service.	Size.	Length.	Former Size.
	<i>Brought forward</i>				3,812	
Buttonwood st....	At Crescent ave.....	Dor.	L.	8-in.	29	6-in.
Carson st.....	Between Shoreham st. and Crescent ave.....	"	L.	"	374	"
"	Between Crescent ave. and Mt. Vernon st.....	"	L.	"	32	"
Everett st.....	At Park st.....	"	L.	"	16	"
Glenarm st.....	Bet. Merrill and Seaver sts.....	"	H.	"	220	"
Grant st.....	At Crescent ave.....	"	L.	"	15	"
Harvard st.....	" Greenock st.....	"	H.	"	5	8-in.
Newport st.....	" Crescent ave.....	"	L.	"	16	6-in.
Seaver st... ..	" Glenarm st.....	"	H.	"	6	"
Shoreham st.....	" Carson st.....	"	L.	"	12	6 and 8 in.
Spring Garden st..	" Crescent ave.....	"	L.	"	15	6-in.
Vaughan st.....	" Harvard st.....	"	H.	"	17	"
Broadway.....	" O st.....	S. B.	L.	"	3	"
"	Bet. K and Q sts.....	"	L.	"	3,353	"
Fifth st.....	At O st.....	"	L.	"	3	"
K st.....	" Broadway.....	"	L.	"	12	"
N st.....	"	"	L.	"	7	"
Second st.....	" O st.....	"	L.	"	3	"
Seventh st.....	"	"	L.	"	3	"
Swallow st.....	Between O and N sts.....	"	L.	"	407	4-in.
Third st.....	At O st.....	"	L.	"	3	6-in.
Wormwood st.....	" A st.....	"	L.	"	8	8-in.
Arlington ave....	West from Fred st.....	Chen.	L.	"	20	"
Arrow st.....	At Bow st.....	"	L.	"	20	"
Bow st.....	Between Harvard and Washington sts.....	"	L.	"	426	6-in.
Devens st.....	Between Washington st. and Rutherford ave.....	"	L.	"	250	6 and 8-in.
Jenner st.....	At Bow st.....	"	L.	"	5	8-in.
Monument ave....	Between Warren st. and Monument square.....	"	L.	"	645	4-in.
Rutherford ave....	Bet. Devens and Chapman sts...	"	L.	"	1,069	6-in.
Summer st.....	At School st.....	"	L.	"	3	"
Union street.....	" Rutherford ave.....	"	L.	"	3	"
	<i>Carried forward</i>				10,812	

Statement of Main Pipe Relaid.—Continued.

LOCATION.		District.	High or Low Service.	Size.	Length.	Former Size.
	<i>Brought forward</i>				10,812	
Wapping st.....	Bet. Chelsea and Water sts.....	Chsn.	L.	8-in.	7	6-in.
	Total 8 inch.....				10,819	
Auburn ct.....	At Cambridge st.....	C. P.	L.	6-in.	16	4-in.
Batterymarch st...	Across Franklin st.....	"	L.	"	4	6-in.
Bond st.....	At Hanson st.....	"	L.	"	19	4-in.
Cherry st.....	" Shawmut ave.....	"	L.	"	44	"
Devonshire st.....	" State st.....	"	H.	"	12	6-in.
Hanson st.....	From Shawmut ave.....	"	L.	"	6	"
Lindall pl.....	At Cambridge st.....	"	L.	"	18	4-in.
Newbern pl.....	" Carver st.....	"	L.	"	3	"
Ridgeway lane....	" Cambridge st.....	"	H.	"	3	6-in.
Tileston st.....	" Hanover st.....	"	L.	"	6	"
Townsend pl.....	" Carver st.....	"	L.	"	15	4-in.
Charlesgate east...	Across Commonwealth ave.....	Rox.	L.	"	137	8-in.
Colony st.....	At Fellows st.....	"	L.	"	12	6-in.
East Lenox st.....	" ".....	"	L.	"	8	"
Fellows ct.....	" ".....	"	L.	"	36	4-in.
" pl.....	" ".....	"	L.	"	41	6-in.
Notre Dame st.....	Bet. Bragdon and Dimock sts..	"	H.	"	75	"
Orange ct.....	At Fellows st.....	"	L.	"	36	4-in.
Perkins pl.....	" Roxbury st.....	"	L.	"	18	"
Washington pl....	" ".....	"	L.	"	46	"
Cohasset st.....	At the brook.....	W. R.	H.	"	69	6-in.
Grovenor road	" Centre st.....	"	H.	"	12	"
St. Joseph st.....	" Woodman st.....	"	H.	"	12	2 and 6-in.
Smith st.....	Easterly from unnamed street...	Bri.	L.	"	7	6-in.
Blue Hill ave.....	Opposite Norfolk st. (connection between 12-inch and 16-inch)...	Dor.	H.	"	7	"
Millet st....	Between Talbot and Southern aves.....	"	H.	"	6	"
Broadway.....	At M st.....	S. B.	H.	"	3	"
"	Between K and Q sts.....	"	L.	"	3	"
C st.....	At West First st., south of branch,	"	L.	"	6	"
Colton st.....	" First st.....	"	L.	"	15	4-in.
	<i>Carried forward</i>				695	

Statement of Main Pipe Relaid.— *Continued.*

LOCATION.		District.	High or Low Service.	Size.	Length.	Former Size.
	<i>Brought forward.....</i>				695	
First st.....	Between Dorchester ave. and Granite st.....	S. B.	L.	6-in.	11	6-in.
N st.....	At Broadway	"	H.	"	3	"
O st.....	" Columbia road.....	"	L.	"	8	"
Benedict st.....	" Rutherford ave.....	Chan.	L.	"	10	"
Devens st.....	" "	"	L.	"	3	"
George st.....	Near Hamblen st.....	"	L.	"	3	4-in.
Summer st... ..	At School st.	"	L.	"	4	6-in.
Union st.....	" Rutherford ave.....	"	L.	"	18	"
Paris ct.....	" Paris st.	E. B.	L.	"	87	4-in.
Wesley st.....	" "	"	L.	"	35	"
Wordsworth st....	Between Bennington st. and B., R. B. & L. R.R.	"	L.	"	3	6-in.
Long Island.....	Southern end of island, between 6-inch line connecting with Moon island and 2-inch line connecting with Moon island..	B. H.	H.	"	144	"
	Total, 6-inch				974	
Franklin ave.....	At Court st.	C. P.	H.	4-in.	16	4 and 8-in.
Townsend pl.....	" Carver st.....	"	L.	"	8	4-in.
Downing st.....	Between Salvisberg ave. and Whittier pl.....	Rox.	L.	"	42	"
	Total, 4-inch.....				66	

Statement of Private Pipe Laid and Abandoned during the Year ending January 31, 1904.

(Not included in Boston Water Department System.)

For Whom.	Where.	District.	High or Low Service.	Size.	Length.
	Laid.				
Insane Hospital Trustees.....	At Austin Farm, between Harvard and Canterbury sts.....	W. R.	H.	8 in.	387
	Abandoned.				
Children's Institutions Department.	" Parental School Grounds, Spring st.....	"	H.	"	62
Insane Hospital Trustees.....	" Austin Farm, between Harvard and Canterbury sts.....	"	H.	"	325

Statement of Main Pipe Raised, Lowered, and Moved Laterally.

NOTE. — This work was occasioned by the operations of corporations, contractors and others, the changing of street grade and sewer construction.

LOCATION.		District.	Size.	High or Low Service.	Length.	Raised, Lowered, or Moved.
Hancock st.....	At Dorchester ave.....	Dor.	24-in.	L.	52	Raised.
State st.....	" Devonshire st.....	C. P.	16 in.	L.	110	Moved.
"	Bet. Merchants' row and Chatham row.....	"	"	L.	100	Raised.
"	Bet. Kilby and Exchange sts.	"	"	L.	72	"
"	At Exchange st.....	"	"	L.	30	"
"	Bet. Kilby and Exchange sts.	"	"	L.	36	"
"	" Devonshire and Exchange sts.....	"	"	L.	96	"
"	At Exchange st.....	"	"	L.	60	"
Columbia road....	" Vale st.....	S. B.	"	L.	23	Moved.
	Total, 16-inch.....				527	
Audubon road....	At Brookline ave.....	C. P.	12-in.	L.	18	Lowered.
Kilby st.....	" State st.....	"	"	L.	11	Raised.
State st.....	Bet. Merchants' row and Chatham row.....	"	"	H.	15	"
"	Bet. Kilby and Congress sts.	"	"	H.	36	"
"	" Devonshire and Congress sts.....	"	"	H.	120	Lowered.
"	At Devonshire st.....	"	"	L.	10	"
"	" Atlantic ave.....	"	"	L.	61	Raised.
Hunneman st.....	East of gate at Harrison ave.	Rox.	"	L.	60	"
Riverway.....	At Brookline ave	"	"	L.	14	Lowered.
Washington st....	Near Whipple st.....	W. R.	"	H.	24	Raised.
Harvard ave.....	At Brighton ave.....	Bri.	"	L.	8	Moved.
Erie st.....	" Merrill st.....	Dor.	"	H.	8	Lowered.
"	" Elmo st.....	"	"	H.	8	"
Glenway st.....	" Harlem st.....	"	"	H.	20	"
River st.....	Opp. Liversidge Home	"	"	H.	8	Moved.
West Park st.....	At Spencer st	"	"	H.	8	Lowered.
Second st.....	Between A and B sts.....	S. B.	"	L.	59	Raised.
	Total, 12-inch.....				488	
Kilby st.....	At State st.....	C. P.	10-in.	H.	11	"

Statement of Main Pipe Raised, Etc. — *Concluded.*

LOCATION.		District.	Size.	High or Low Service.	Length.	Raised, Lowered, or Moved.
Essex st.	At Lincoln st.	C. P.	8-in.	H.	6	Raised.
Exchange st.	" State st.	"	"	L.	7	"
Lewis Wharf.	North side.	"	"	L.	12	Moved.
State st.	Bet. Merchants' row and Chatham row.	"	"	H.	20	Raised.
Binford st.	Across A st. (over 16-inch line)	S. B.	"	L.	10	"
Bailey st.	Opp. Hillside terrace	Dor.	"	H.	10	Lowered.
"	At Washington st.	"	"	H.	11	"
Austin st.	Bet. Washington and Lawrence sts.	Chan.	"	L.	532	"
Point Shirley.	On beach at Shirley gut.	Win.	"	L.	130	"
	Total, 8-inch.				738	
Tremont pl.	Off Beacon st.	C. P.	6-in.	H.	14	Raised.
Harold st.	At Ruthven st.	Rox.	"	H.	36	"
Oakland ave.	" Dudley st.	"	"	L.	16	Moved.
North Beacon st..	Opp. Albany House	Brj.	"	L.	12	"
Elmo st.	At Erie st.	Dor.	"	H.	8	Lowered.
Erie st.	" Michigan ave.	"	"	H.	10	"
Fuller st.	" Washington st.	"	"	H.	10	Raised.
Harlem st.	" Glenway st.	"	"	H.	10	Lowered.
Wrentham st.	Near Adams st.	"	"	H.	5	Raised.
Bunker Hill st.	Junction of Edgeworth st.	Chan.	"	L.	12	"
Bennington st.	At Wordsworth st.	E. B.	"	L.	11	Moved.
"	" Breed st.	"	"	L.	7	Raised.
"	145 feet north of Breed st.	"	"	L.	7	"
Long Island.	Southwestern side of island, south of connection bet. 12-inch and 6-inch lines, opposite Rainsford island,	B. H.	"	H.	240	Lowered.
"	Westerly side of island, north of connection bet. 12-inch and 6-inch lines, opposite Rainsford island.	"	"	H.	75	"
	Total, 6-inch.				473	
Ludlow st.	Corner of Eden st.	Chan.	4-in.	L.	12	Moved.

**Statement of Location, Size, and Number of Feet of Main Pipe
Abandoned during the Year ending January 31, 1904.**

LOCATION.		District.	High or Low Service.	Size.	Length.
Brookline ave.....	Bet. Bellevue st. and B. & A. R.R....	C. P.	L.	40-in.	1,721
Tremont st.....	" Massachusetts ave. and Rutland st.....	"	"	30-in.	941
Fourth st.....	" Dorchester ave. and Fort Point Channel.....	So. B.	"	20-in.	655
Atlantic ave.....	At State st.....	C. P.	"	16-in.	72
Commercial st....	" Eastern ave.....	"	"	"	140
Court st.....	Between Scollay sq. and Court sq. east side.....	"	H.	"	231
"	At Scollay sq. (across the street from new 16-inch to 12-inch at Cornhill).....	"	"	"	50
State st.....	" Devonshire st.....	"	L.	"	12
"	" Exchange st..	"	"	"	25
Binford st.....	Across A st. between 12-inch and 16-inch mains.....	So. B.	"	"	10
Dorchester st.....	Bet. Vale and Jenkins sts.....	"	H.	"	460
Bow st.....	" Harvard and Washington sts....	Chan.	L.	"	4
	Total 16 inch.....				1,004
Brookline ave.....	At Burlington ave. (connection between 40-inch and 12-inch.....	C. P.	L.	12-in.	20
Cambridge st.....	Between Charles and Hancock sts....	"	L.	"	1,676
"	Across northerly side of Charles st., between Charles st. and Charles river.....	"	L.	"	86
Court st.....	Between Scollay sq. and Court sq....	"	H.	"	11
Lehigh st.....	" junction, South and Harvard sts. and a point 454 feet from gate at Albany st.	"	L.	"	932
State st.....	Near Congress st.....	"	H.	"	13
Fenway.....	At Huntington ave. entrance.....	Rox.	L.	"	300
Hunneman st.....	Bet. Harrison ave. and Albany st....	"	L.	"	385
St. Alphonsus st...	" Smith and Tremont sts.....	"	L.	"	288
"	" Alleghany and Tremont sts.....	"	H.	"	174
South st.....	Opposite Bussey College entrance...	W. R.	H.	"	8
Weld st.....	At Walter st.....	"	H.	"	51
Blue Hill ave.....	Between Walk Hill and Norfolk sts..	Dor.	H.	"	2,424
Fremont st.....	From Blue Hill ave.....	"	H.	"	227
	<i>Brought forward.....</i>				6,545

Statement of Main Pipe Abandoned. — Continued.

LOCATION.		District.	High or Low Service.	Size.	Length.
	<i>Carried forward</i>				6,545
Glenway st.....	Between No. 60 and No. 64.....	Dor.	H.	12-in.	7
Harvard st.....	" Blue Hill ave. and Wales st.	"	H.	"	790
Sydney St.....	At Crescent ave	"	L.	"	21
A Street.....	" Private Way (natural continuation of Mt. Washington ave., between Granite and A sts)....	So. B.	L.	"	20
Foundry st.....	Under Fourth-st. Bridge.....	"	L.	"	6
"	Bet. Fourth-st. Bridge and Swan st..	"	H.	"	290
Fourth st.....	Under bridge, between Foundry st. and Fort Point channel.....	"	H.	"	400
Swan st.....	Bet. Foundry st. and Dorchester ave.	"	H.	"	540
Bennington st....	" Walley and Leverett sts.....	E. B.	L.	"	213
Cottage st.....	" Maverick and Everett sts.....	"	L.	"	231
Ford st.....	" Bennington and Boardman sts..	"	L.	"	165
Overlook st.....	At Waldemar ave.....	"	H.	"	6
	Total, 12-inch.....				<u>9,234</u>
Foundry st.....	Between Fourth-st. bridge and Dorchester ave.....	So. B.	L.	10-in.	1,325
Midway st.....	At Binford st.....	"	L.	"	8
Ninth st.....	" Dorchester st.....	"	L.	"	49
Bremen st.....	" Porter st.....	E. B.	L.	"	50
	Total, 10-inch.....				<u>1,432</u>
Central st.	At India st.....	C. P.	L.	8-in.	3
Charlesgate East..	Between Beacon and Marlboro sts.	"	L.	"	169
Congress st.....	At State st.....	"	H.	"	44
Court sq. (east side)	" Court st.....	"	H.	"	19
Cumberland st. ...	" No. 31.....	"	L.	"	5
Franklin ave.....	Across Court st.....	"	H.	"	34
" st.....	Between Pearl and India sts.....	"	L.	"	15
Kilmarnock st....	At Queensbury st.....	"	L.	"	33
North Russell st...	" Cambridge st.....	"	L.	"	38
Portland st.....	Across Sudbury st.....	"	L.	"	53
St. James ave.	Bet. Clarendon and Dartmouth sts..	"	H.	"	100
State st.....	" Washington and Congress sts...	"	H.	"	254
Sudbury st.	" Merrimac and Court sts.....	"	L.	"	223
	<i>Brought forward</i>				990

Statement of Main Pipe Abandoned. — *Continued.*

LOCATION.		District.	High or Low Service.	Size.	Length.
	<i>Carried forward</i>				990
Charlesgate East..	Across Commonwealth ave.....	Rox.	L.	8-in.	137
"	Between Commonwealth ave. and Marlboro st.	"	L.	"	216
Gainsborough st..	At N.Y., N.H. & H. R.R.	"	L.	"	12
Hampshire st.	Near Whittier st.....	"	L.	"	80
Huntington ave...	At Vancouver st.....	"	L.	"	23
Randall st.	" east side of Fellows st.	"	L.	"	8
Vila st.	" Kenwood road.....	"	L.	"	6
Brown ave.	" Garden st.....	W. R.	H.	"	8
Proctor st.	" Walter st.	"	H.	"	34
St. John st.....	" Centre st.....	"	H.	"	7
Walter st.....	Between Weld and Proctor sts.	"	H.	"	874
"	" Weld and Mendum sts.....	"	H.	"	236
Harvard st.....	At Greenock st.	Dor.	H.	"	9
Shoreham st.....	" Carson st.	"	L.	"	7
First st.....	" C st.	So. B.	L.	"	7
Wornwood st....	" A st.....	"	L.	"	11
Arlington ave.	West from Fred st.....	Chan.	L.	"	20
Arrow st.	At Bow st.....	"	L.	"	60
Bow st.....	Bet. Harvard and Washington sts...	"	L.	"	30
Devens st.	" Washington st. and Rutherford ave.....	"	L.	"	36
Jenner st.....	At Bow st.....	"	L.	"	5
	Total, 8 inch.....				2,816
Anderson st.....	At Cambridge st.....	C. P.	L.	6 in.	16
Batterymarch st..	Across Franklin st.....	"	L.	"	57
Beverly st.....	Bet. Causeway and Washington sts..	"	L.	"	724
Blandford st.....	" Commonwealth ave. and B. & A. R.R.	"	L.	"	12
Bowdoin st.....	At Cambridge st.....	"	H.	"	12
Bowker st.....	" Sudbury st.....	"	L.	"	22
Cambridge st.....	Bet. Hancock st. and Bowdoin sq...	"	H.	"	551
Camden st.....	" Washington and Watson sts....	"	L.	"	1,978
Carver st.....	" Elliot and Pleasant sts.....	"	L.	"	726
"	" Boylston and Elliot sts.....	"	L.	"	400
	<i>Brought forward</i>				4,498

Statement of Main Pipe Abandoned.— *Continued.*

LOCATION.		District.	High or Low Service.	Size.	Length.
	<i>Brought forward</i>				4,498
Chambers st.....	At Cambridge st.....	C. P.	L.	6-in.	40
Clarendon st.....	Across St. James ave.....	"	L.	"	64
Cobb st.....	At Shawmut ave.....	"	L.	"	42
Commonw'lth ave. (north side) ...	Across Dartmouth st.....	"	L.	"	116
Commonw'lth ave. (south side)....	" "	"	L.	"	106
Corning st.....	At west side Shawmut ave.....	"	L.	"	20
"	" east side Shawmut ave.....	"	L.	"	45
Court sq. (west side)....	" Court st.....	"	H.	"	40
Dartmouth st.....	Between Beacon and Boylston sts...	"	L.	"	1,092
Devonshire st.....	At State st.....	"	H.	"	37
East Concord st...	Bet. Harrison ave. and Albany st...	"	L.	"	722
Franklin st.....	" Pearl and India sts.....	"	L.	"	956
Friend st.....	Across Sudbury st.....	"	L.	"	45
Garden st.....	At Cambridge st.....	"	L.	"	20
Grove st.....	" "	"	L.	"	23
Hanson st.....	From Shawmut ave.....	"	L.	"	195
Harrison ave.....	Between Essex st. and Hayward pl..	"	H.	"	96
Hayward pl.....	At Harrison ave.....	"	H.	"	39
India st.....	Between State and Central sts.	"	L.	"	143
Irving st.....	At Cambridge st.....	"	L.	"	33
Joy st.....	" "	"	L.	"	14
Massachusetts ave. (north side)....	Between Columbus ave. and N.Y., N.H. & H. R.R.....	"	L.	"	502
Massachusetts ave. (south side)....	At Columbus ave.....	"	L.	"	60
Newbury st.....	Across Dartmouth st.....	"	L.	"	104
No. Anderson st..	At Cambridge st.....	"	L.	"	39
Northfield st.....	" Camden st.....	"	L.	"	18
North Grove st....	" Cambridge st.....	"	L.	"	39
Randolph st.....	Bet. Harrison ave. and Albany st..	"	L.	6-in.	408
Ridgeway lane....	At Cambridge st.....	"	H.	"	12
St. James ave.....	Bet. Clarendon and Dartmouth sts..	"	H.	"	491
"	" Berkeley and Clarendon sts.....	"	L.	"	610
Shawmut ave.....	" Cherry and Warrenton sts.....	"	L.	"	1,109
	<i>Carried forward</i>				11,778

Statement of Main Pipe Abandoned.— *Continued.*

LOCATION.		District.	High or Low Service.	Size.	Length.
	<i>Brought forward</i>				11,778
South Russell st...	At Cambridge st.....	C. P.	L.	6-in.	24
Sudbury st.....	Between Merrimac and Court sts...	"	L.	"	455
Temple st.....	At Cambridge st.....	"	H.	"	14
Tilston st.....	" Hanover st.....	"	L.	"	6
Trinity pl.....	" St. James ave.....	"	H.	"	13
Union Park st....	" Albany st.....	"	L.	"	12
Union wharf.....	South side, easterly end.....	"	L.	"	50
"	" end of wharf.....	"	L.	"	5
Watson st.....	At Camden st.....	"	L.	"	33
West Cedar st....	From Cambridge st.....	"	L.	"	120
West Dedham st..	Between Washington st. and Shawmut ave.....	"	L.	"	298
West Newton st..	Between Columbus ave. and Tremont st.....	"	L.	"	874
West Springfield st.....	Between Columbus ave. and Tremont st.....	"	L.	"	705
Wheeler st.....	At Shawmut ave.....	"	L.	"	29
Worcester st.....	Between Columbus ave. and Tremont st.....	"	L.	"	727
Bellevue st.....	At Bernier st.....	Rox.	L.	"	1
Charlesgate east..	Bet. Boylston road and Ipswich st...	"	L.	"	420
Colony st.....	At Fellows st.....	"	L.	"	12
Commonwealth ave. (north side).	" Charlesgate east.....	"	L.	"	22
East Lenox st....	" Fellows st.....	"	L.	"	36
Fellows pl.....	" ".....	"	L.	"	41
" st.....	Between Hunneman and Northampton st.....	"	L.	"	1,092
Harrison ave.....	Between Zeigler and Dudley sts....	"	L.	"	283
Marlboro st.....	" Massachusetts ave. and Charlesgate east.....	"	L.	"	646
Notre Dame st....	" Bragdon and Dimock sts..	"	H.	"	75
Regent sq.....	At end of Main.....	"	H.	"	5
Roxbury st.....	Bet. Shawmut ave. and Putnam pl..	"	L.	"	622
St. Botolph st....	At north side of Gainsboro st.....	"	L.	"	39
Fresno st.....	Between Dudley ave. and Alder st...	W. R.	H.	"	3
Grovenor road....	At Centre st.....	"	H.	"	12
	<i>Carried forward</i>				18,402

Statement of Main Pipe Abandoned. — *Continued.*

LOCATION.		District.	High or Low Service.	Size.	Length.
	<i>Brought forward</i>				18,402
Haverford st. (formerly Argyle st.)	From Cornwall st.....	W. R.	H.	6-in.	196
Jones st.....	At Walter st.....	"	H.	"	42
St. Joseph st.....	" Woodman st.....	"	H.	"	4
Smith st.....	Easterly from unnamed st.....	Bri.	L.	"	16
Abbott st.....	At Harvard st.....	Dor.	H.	"	18
Ashland st.....	" Park st.....	"	L.	"	16
Beach st.....	" ".....	"	L.	"	37
Blue Hill ave.....	Opp. Norfolk st. (connection bet. 12-in. and 16-in.).....	"	H.	"	14
Buttonwood st....	At Crescent ave.....	"	L.	"	29
Carson st.....	" ".....	"	L.	"	30
"	Bet. Crescent ave. and Mt. Vernon st.,	"	L.	"	642
Clayton st.....	At Park st.....	"	L.	"	36
Crescent ave.....	Bet. Dorchester ave. and Sydney st.,	"	L.	"	1,187
Everett st.....	At Park st.....	"	L.	"	16
Exchange st.....	" ".....	"	L.	"	30
Glenarm st.....	Bet. Merrill and Seaver sts.....	"	H.	"	220
Grant st.....	At Crescent ave.....	"	L.	"	15
Millet st.....	Bet. Talbot and Southern aves.....	"	H.	"	6
Moseley st... ..	At Crescent ave.....	"	L.	"	34
Newport st.....	" ".....	"	L.	"	16
Park st.....	Bet. Freeport and Adams st.....	"	L.	"	1,745
Seaver st.....	At Glenarm st.....	"	H.	"	6
Shelburne st.....	Off Buttonwood st.....	"	L.	"	251
Shoreham st.....	At Carson st.....	"	L.	"	7
Spring Garden st.,	" Crescent ave.....	"	L.	"	15
Vaughan st.....	" Harvard st.....	"	H.	"	17
Wales st.....	Across Harvard st.....	"	H.	"	46
Bowen st.....	Bet. E and F sts.....	So. B.	L.	"	8
Broadway.....	" K and Q sts.....	"	L.	"	3,356
"	At M st.....	"	H.	"	3
"	" O st.....	"	L.	"	3
C st.....	" West First st., south of branch...	"	L.	"	31
Champney st.....	Across Columbia road.....	"	L.	"	69
	<i>Carried forward</i>				26,563

Statement of Main Pipe Abandoned.— *Continued.*

LOCATION.		District.	High or Low Service.	Size.	Length.
	<i>Brought forward</i>				26,563
Columbia road....	Bet. Newman and Preble sts.	So. B.	L.	6-in.	302
Fifth st.	At O st.	"	L.	"	3
First st.	" C st.	"	L.	"	46
"	Bet. Dorchester ave. and Granite st. .	"	L.	"	782
K st.	At Broadway	"	L.	"	12
N st.	" "	"	H.	"	3
"	" "	"	L.	"	3
O st.	Bet. First st. and Columbia road.	"	L.	"	2,340
"	At Columbia road.	"	L.	"	8
Second st.	" O st.	"	L.	"	3
Seventh st.	" "	"	L.	"	3
Sixth st.	" "	"	L.	"	3
Third st.	" "	"	L.	"	3
Benedict st	" Rutherford ave.	Chsn.	L.	"	10
Bow st.	Bet. Harvard and Washington sts	"	L.	"	595
Devens st.	At Rutherford ave.	"	L.	"	3
"	Between Washington st. and Rutherford ave.	"	L.	"	214
Rutherford ave....	Between Devens and Chapman sts.	"	L.	"	1,069
Summer st.	At School st.	"	L.	"	7
Union st.	" Rutherford ave.	"	L.	"	21
Wapping st.	Between Chelsea and Water sts.	"	L.	"	482
Water st.	At Wapping st.	"	L.	"	4
Bennington st.	Between Walley st. and Leverett ave.	E. B.	L.	"	189
Paris st.	" Meridian and Gove sts.	"	L.	"	467
Porter st.	" Chelsea and Bremen sts.	"	L.	"	205
Wordsworth st.	" Bennington st. and B., R. B. & L. R.R.	"	L.	"	3
Long Island.	Southern end of island, between 6-inch line connecting with Moon Island, and 2-inch line connecting with Moon Island	B. H.	H.	"	144
	Total, 6-inch				33,437
Auburn ct.	At Cambridge st.	C. P.	L.	4-in.	16
Bond st.	" Hanson st.	"	L.	"	19
Cherry st.	" Shawmut ave.	"	L.	"	44
	<i>Carried forward</i>				79

Statement of Main Pipe Abandoned.— *Concluded.*

LOCATION.		District.	High or Low Service.	Size.	Length.
	<i>Brought forward</i>				79
Corn ct.....	Off Faneull Hall sq.....	C. P.	L.	4-in.	4
Franklin ave.....	At Court st.....	"	H.	"	6
"	"	"	H.	"	15
Hale st.....	From Green st... ..	"	L.	"	324
Lindall pl.....	At Cambridge st.....	"	L.	"	18
Newbern pl.....	" Carver st.....	"	L.	"	3
Sewall pl.....	" Milk st.....	"	H.	"	4
"	" "	"	L.	"	2
Townsend pl.....	" Carver st	"	L.	"	23
Union Wharf.....	South side, easterly end.....	"	L.	"	20
Downing st.....	Bet. Salvisberg ave. and Whittier pl.	Rox.	L.	"	45
"	" " " "	"	L.	"	2
Fellows ct.....	At Fellows st.....	"	L.	"	36
Harrison ave	At south side of Dudley st.....	"	L.	"	45
Orange ct.....	" Fellows st.....	"	L.	"	36
Perkins pl.....	" Roxbury st.....	"	L.	"	18
Washington pl....	" "	"	L.	"	46
Colton st.....	" First st.....	So. B.	L.	"	15
Swallow st.....	Between O and N sts.....	"	L.	"	407
Beach st.....	Off Medford st.....	Chsn.	L.	"	372
George st.....	Near Hamblen st.....	"	L.	"	3
Monument ave....	Bet. Warren st. and Monument sq...	"	L.	"	645
Paris ct.....	At Paris st.....	E. B.	L.	"	37
Wesley st.....	" "	"	L.	"	35
	Total, 4-inch.....				2,240
St. Joseph st.....	At Woodman st.....	W. R.	H.	2-in.	8
Monument ave....	Between Main and Warren sts.....	Chsn.	L.	"	84
	Total, 2-inch.....				92

Table showing Length of Distribution Mains Laid, Relaid, and Abandoned during the Year 1903, and the Total Length of the Distribution System of the City of Boston, January 31, 1904.

	DIAMETER OF MAINS IN INCHES.																Totals.
	48	42	40	36	30	28	24	20	16	12	10	8	6	4	3	2	
Total connected with system, January 31, 1903.....	33,671	16,813	24,231	39,984	86,434	244	79,751	93,896	187,919	1,129,886	110,270	561,813	1,373,376	90,015	7,102	4,280	3,889,685
Length laid and relaid dur- ing the year.....	.....	.....	594	.....	2,012	.....	.....	337	4,404	29,689	15,457	20,586	5,687	174	.....	.....	78,910
Length abandoned during the year.....	.....	.....	1,721	.....	941	.....	.....	655	1,004	9,234	1,432	2,816	33,487	2,240	.....	92	53,572
Total connected with system, January 31, 1904.....	33,671	16,813	23,104	39,984	87,505	244	79,751	93,578	191,319	1,150,941	124,295	579,583	1,345,596	87,949	7,102	4,188	3,865,023 or 732 miles.

Statement of Hydrant, Blow-off and Reservoir Pipes, January 31, 1904.

	DIAMETER IN INCHES.								Totals.
	16	12	10	9	8	6	4	3	
Total length connected with system, January 31, 1903.....	472	6,599	105	2,506	1,288	39,000	6,962	3	56,925
Length laid and relaid during the year.....	2	38	.....	.....	227	1,743	155	.....	2,165
Length abandoned during the year .....	.....	41	.....	58	.....	467	475	.....	1,041
Total length connected with system, January 31, 1904.....	474	6,596	105	2,448	1,515	40,276	6,632	3	58,049

Main Gates Established and Abandoned during the Year, and Number in System January 31, 1904.

	DIAMETER IN INCHES.													Totals.
	48	40	36	30	24	20	16	12	10	8	6	4	3	
Total number in system January 31, 1903.....	1	5	28	47	64	67	336	2,218	306	1,456	4,215	543	10	9,296.
Established during the year.....	.....	.....	* 2	* 2	1	1	15	84	66	99	61	6	.....	337
Abandoned during the year.....	.....	.....	1	1	.....	.....	4	14	3	10	137	17	.....	187
Total number in system, January 31, 1904.....	1	5	29	48	65	68	347	2,288	369	1,545	4,139	532	10	9,446.

* Established one 6-inch by-pass on 36-inch gate, Huntington Avenue at Heath street.
 Established one 6-inch by-pass on 30-inch gate, Tremont street at Massachusetts avenue.

Private Gates.

	DIAMETER IN INCHES.			Totals.
	20	12	6	
Established during the year.....	2	2	1	5
Abandoned during the year.....				
Increase.....	2	2	1	5

Blow-off Gates.

	DIAMETER IN INCHES.				Totals.
	12	8	6	4	
Established during the year.....	2	1	1	2	6
Abandoned during the year.....	2			4	6
Increase.....	0	1	1	-2	0

Hydrant Gates.

	DIAMETER.	Totals.
	6 inches.	
Total number in system, January 31, 1903.....	9	9
Established during the year.....		
Abandoned during the year.....	1	1
Total number in system, January 31, 1904.....	8	8

Private Hydrant Gates.

	DIAMETER.	Totals.
	6 inches.	
Total number in system, January 31, 1903.....	1	1
Established during the year.....		
Abandoned during the year.....		
Total number in system, January 31, 1904.....	1	1

Hydrants Established and Abandoned during the Year.

	ESTABLISHED.					Totals.	ABANDONED.					Totals.
	Lowry.	Boston Lowry.	Ordinary Post.	Bachelor Post.	Boston.		Lowry.	Boston Lowry.	Ordinary Post.	Bachelor Post.	Boston.	
City Proper (Public).....	11	1	3	65	...	80	33	3	22	...	19	77
“ “ (Private).....	3	...	...	...	...	3	...	...	...	...	2	2
South Boston (Public).....	4	2	2	60	...	68	16	...	12	2	31	61
“ “ (Private).....	1	...	2	...	...	3	...	...	...	...	4	4
East Boston (Public).....	...	4	1	16	...	21	8	4	5	1	...	18
Roxbury (Public).....	1	...	6	23	1	31	9	...	10	1	...	20
Dorchester (Public)	1	8	3	39	1	52	11	10	7	...	1	29
“ (Private) .....	...	...	...	1	...	1	...	...	...	...	...	...
West Roxbury (Public).....	...	10	12	20	...	42	5	9	11	1	1	27
“ “ (Private) .....	...	...	1	...	...	1	...	...	1	...	...	1
Brighton (Public).....	1	4	...	5	...	10	...	4	2	...	...	6
Charlestown (Public).....	...	...	...	16	...	16	15	...	...	...	...	15
Long Island (Private).....	...	...	...	...	1	1	...	...	...	...	1	1
Total number of Public.....	18	29	27	244	2	320	97	30	69	5	52	253
Total number of Private and Suburban.....	4	...	3	1	1	9	...	...	1	...	7	8

**Total Number of Hydrants Connected with Distribution System,
January 31, 1904.**

	Lowry.	Boston Lowry.	Ordinary Post.	Bachelor Post.	Boston.	Totals.
City Proper (Public).....	650	48	261	374	134	1,467
" " (Private).....	3		11		42	56
South Boston (Public).....	213	31	161	139	47	591
" " (Private).....	3		15		28	46
East Boston (Public).....	126	26	196	50	7	405
" " (Private).....	8		7		25	40
Roxbury (Public).....	526	91	438	183	43	1,281
" (Private).....	2				10	12
Dorchester (Public).....	425	230	973	193	30	1,851
" (Private).....		1	4	1	4	10
West Roxbury (Public).....	110	235	645	59	29	1,078
" " (Private).....			15		1	16
Brighton (Public).....	71	82	390	19	21	583
" (Private).....			7		2	9
Charlestown (Public).....	171	36	39	59	2	307
" (Private).....	14	1	36		6	57
Deer Island (Private).....			19			19
Long Island (Private).....			6			6
Thompson's Island (Private).....			2			2
Gallop's Island (Private).....			1		1	2
Rainsford's Island (Private).....		3	1		1	5
Quincy.....		1	11			12
Brookline.....		2				2
Total number of Public Hydrants.....	2,292	779	3,103	1,076	313	7,563
Total number of Private and Suburban Hydrants.....	30	8	135	1	120	294

Water Posts.**LOCATION OF WATER POSTS ESTABLISHED AND ABANDONED DURING THE YEAR.***Established.*

Alford street, opposite old location, near Almshouse, Charlestown.
 Broadway, at N street, South Boston.
 Bunker Hill street, between Polk and Elm streets, Charlestown.
 Cliff street, near Washington street, Roxbury.
 Huntington avenue, opposite Heath street, Roxbury.
 Leonard street, about 50 feet from Adams street, Dorchester.
 Oakland street, at Hollingsworth street, Dorchester.
 Q street, opposite Third street, South Boston.
 South Huntington avenue, near Bynner street, West Roxbury.
 South Huntington avenue, at Centre street, West Roxbury.
 South Margin street, between Prospect and Staniford streets, City Proper.
 Sydney street, at Sudan street, Dorchester.
 Washington street, near Gaylord street, Dorchester.
 Wyman street, at Chestnut avenue, Roxbury.

Abandoned.

Alford street, near Almshouse, Charlestown.
 Bowdoin street, at Washington street, Dorchester.
 Bunker Hill street, opposite Polk street, Charlestown.
 Centre street, opposite Boylston street, West Roxbury.
 Chestnut avenue, opposite Sheridan street, West Roxbury.
 Dorchester avenue, near Adams street, Dorchester.
 Dudley street, near Washington street, Roxbury.
 Harbor View street, at No. 37, Dorchester.
 Hazel street, at Rockview street, West Roxbury.
 Heath street, at Huntington avenue, Roxbury.
 N street, at Broadway, South Boston.
 Oliver street, near Milk street, City Proper.
 Prospect street, at South Margin street, City Proper.
 Q street, at Fourth street, South Boston.

Number of Water Posts Connected with System, January 31, 1904.

DISTRICT.	Number connected with System, January 31, 1903.	Established during the year.	Abandoned during the year.	Number connected with System, January 31, 1904.
City Proper	78	1	2	77
Roxbury	80	3	2	81
West Roxbury.....	96	2	3	95
Brighton	54	.....	.....	54
Dorchester	106	4	3	107
South Boston.....	39	2	2	39
Charlestown.....	22	2	2	22
East Boston.....	42	.....	.....	42
Totals	517	14	14	517

Fountains.*Style. Abandoned During the Year.*

- (B) Junction of Blue Hill avenue and River street, Dorchester.
 (C) Prescott street, in front of school-house, near Bennington street, East Boston.

Number of Fountains in Service, January 31, 1904.

DISTRICT.	Style A.	Style B.	Style C.	Style D.	Style E.	Style F.	Totals.
City Proper	11	4	8	.....	12	.....	35
Roxbury	9	3	2	.....	5	.....	19
West Roxbury	4	1	.....	1	2	.....	8
Brighton	5	.....	1	.....	.....	.....	6
Dorchester .....	.....	2	.....	1	.....	7	10
South Boston.	3	1	3	.....	5	.....	12
Charlestown	1	3	.....	1	4	.....	9
East Boston.....	.....	4	3	.....	4	.....	11
Totals	33	18	17	3	32	7	110

*Style.***NOTE.**

- (A) Indicates fountains for man and beast, with automatic fixtures for man and beast in warm weather, and a continuous flow of water for beasts in cold weather.
 (B) Indicates fountains for beasts only. Continuous flow of water all the year.
 (C) Indicates fountains for man only. Automatic fixtures. In service during warm weather only.
 (D) Indicates fountains for man and beast. Automatic fixtures for both. In service during warm weather only.
 (E) Indicates cold water fountains for man only. Automatic fixtures. In service during warm weather only.
 (F) Indicates fountains for man and beast, with automatic fixtures for man in warm weather, and a continuous flow of water for beasts all the year.

Air Cocks.*Established.*

LOCATION.	District.	Diameter of Main.	High or Low Service.	Size of Air Cock.
Tremont st., at Massachusetts ave.....	C. P.	30-in.	Low.	2-in.
Tremont st., at Springfield st.....	"	"	"	"
Tremont st., between Rutland and Concord sts.....	"	"	"	"
Huntington ave., at Wigglesworth st.....	Rox.	20-in.	High.	"
Huntington ave., at Heath st.....	"	48-in.	"	"
Washington st., 60 ft. south of Bailey st.....	Dor.	30-in.	"	"
Dorchester ave., near East st.....	"	24-in.	Low.	"
Pleasant st., opposite No. 115.....	"	"	"	"
Blue Hill ave., over N.Y., N.H. & H. R.R.....	"	16-in.	High.	"
Long Island, on first hill north of head, at southwestern extremity of island.....	B. H.	12-in.	"	"
Long Island, on head at southwesterly extremity.....	"	"	"	"

Abandoned.

LOCATION.	District.	Diameter of Main.	High or Low Service.	Size of Air Cock.
Tremont st., at Massachusetts ave.....	C. P.	30-in.	Low.	2-in.
Dorchester st., near railroad bridge.....	S. B.	16-in.	High.	1½-in.
Brookline ave., at Audubon road.....	C. P.	40-in.	Low.	1-in.

Blow-off Cocks.*Established.*

LOCATION.	District.	Size.
Heath ave., easterly from Heath place.....	Roxbury.	1-inch.

Deacon Meters.*Established.*

Quincy street, at Columbia road, Dorchester.

Abandoned.

Dorchester street, opposite Boston place, South Boston.

Fire Reservoirs.

Connections with Boston Water Department system abandoned at:

Broadway, at C street, South Boston.

Devens street, at Rutherford avenue, Charlestown.

Statement of Service Pipes Laid and Abandoned during Year ending January 31, 1904.

SIZE OF SERVICES LAID AND ABANDONED.	CITY PROPER.		SOUTH BOSTON.		EAST BOSTON.		ROXBURY.		DORCHES- TER.		WEST ROXBURY.		BRIGHTON.		CHARLES- TOWN.		TOTALS.	
	Number of Services.	Length in Feet.	Number of Services.	Length in Feet.	Number of Services.	Length in Feet.	Number of Services.	Length in Feet.	Number of Services.	Length in Feet.	Number of Services.	Length in Feet.	Number of Services.	Length in Feet.	Number of Services.	Length in Feet.	Number of Services.	Length in Feet.
12-inch laid.....	1	865													1	18	2	865
12 " abandoned.....																	1	1,325
10 " laid.....			1	1,325														
10 " abandoned.....																		
8 " laid.....			1															
8 " abandoned.....																		
6 " laid.....	2	42					2	83							1	19	6	94
6 " abandoned.....	3	121															4	121
4 " laid.....	18	250	1	14	2	26	1	19							1	346	81	1,180
4 " abandoned.....	6	77	3	52							7	475	1	10	1	34	10	153
3 " laid.....	27	658			1	20	1	12									29	690
3 " abandoned.....	7	168															7	168
2 " laid.....	32	612	1	60	2	104	6	138	1	17	4	74			1	4	47	1,009
2 " abandoned.....	4	161															4	161
1 1/2 " laid.....	21	689	3	94	1	30	5	178	7	185	1	32			2	88	40	1,041
1 1/2 " abandoned.....	8	67															8	67
1 " laid.....	6	119			1	27	2	51	3	90	2	62					14	358
1 " abandoned.....	1	33							1	30							2	68
1 " laid.....	34	969	8	290	2	66	3	88	4	181	8	88			4	117	65	1,775
1 " abandoned.....	12	206	1	34	1	18	1	38	4	119					1	87	21	499
1 " laid.....	15	358					2	60	4	38	1	11			4	132	27	631
1 " abandoned.....	7	122							3	260	1	18					11	395
1 " laid.....	55	1,010	61	2,171	31	1,007	88	2,200	235	6,096	101	2,837	71	2,010	30	606	673	17,377
1 " abandoned.....	111	2,882	23	557	5	174	12	887	16	436	7	163	1	25	9	186	184	4,780
1 " laid.....	2	52					4	138	4	89							10	279
Total laid.....	211	5,442	76	3,090	40	1,280	110	2,785	264	6,456	124	3,064	74	2,051	44	1,260	933	26,348
Total abandoned.....	166	3,889	29	648	6	192	17	543	28	934	8	176	2	72	11	247	267	6,696
Net increase.....	55	1,553	47	3,847	34	1,088	93	2,242	236	5,522	116	2,908	72	1,979	33	1,013	676	19,652

Total number of service pipes, 90,013.

Aggregate length of same, 2,490,879 feet.

**Maintenance Work of Miscellaneous Character Performed
during the Year ending January 31, 1904.**

	Total Number during the Year.
Boxes covering main pipe on bridges repaired	17
Brick gate chambers built, replacing wooden boxes	22
Deacon meter boxes renewed	3
Dead ends blown off	881
Fountain repairs	155
Fountains and troughs cleaned and inspected	3,270
Gates in service oiled and tested for general efficiency	185
Gates renewed on account of deterioration	14
Gates repaired	242
Gate boxes renewed	163
Gate boxes repaired	1,010
Gate covers salted in cold weather	4,659
Gate frames and covers renewed	183
Gates inspected	235
Hay removed from hydrant boxes	359
Hydrant barrels changed for various reasons	93
Hydrant barrels changed on account of street grading	45
Hydrant boxes cleaned of mud and water	932
Hydrant boxes renewed	122
Hydrant boxes repaired	341
Hydrant frames and covers renewed	107
Hydrants hayed as protection in cold weather	190
Hydrant inspections in cold weather	154,505
Hydrants in service oiled and tested for general efficiency,	2,515
Hydrants painted	3,305
Hydrants repaired	1,421
Hydrants strapped	49
Hydrants thawed out	68
Investigations made when further action on the part of Water Department was unnecessary	945
Locations of gates marked	8,063
Main pipe repairs, caused by :	
Action of tide	2
Blasting	13
Cap blown off	1
Defective pipe	18
Defective sleeve	7
Exhaust steam	1
Frozen	2
Joints drawn	98
No cause assigned	6
Pick-hole	2
Rust	4
Set screws loose	2
Settlement	45
Sewer construction	11

	Total Number during the Year.
Sewer manhole on pipe	1
Split pipe	5
Vibration	3
Pavement repairs	1,826
Salt (sacks of) purchased and delivered to Fire Department	4,000
Service pipe repairs, caused by :	
Blasting	3
Broken by driving piles	2
Broken by foundation wall	34
Broken by lightning rod	3
Broken by steam-roller	9
Burned by thawing	1
Cake of ice falling on pipe	1
Collision with plow	1
Conduit settling on pipe	1
Corrosion	1
Defective couplings	68
Defective joints	55
Defective packing	12
Defective pipes	205
Electrolytic action	14
Frost (cold storage)	3
Frost (natural)	89
Gnawed by rats	7
Main cock blown out	1
Main cocks required renewal	47
Main uprights filled with dirt	14
Main uprights required renewal	35
Main uprights to high	3
Operations of Boston Elevated Railway Company	2
Operations of Boston Transit Company	32
Operations of Gas Company	5
Operation of Sewer Department and its agents	93
Pipe stolen	2
Pipes eaten by ashes	5
Pipes eaten by earth	3
Pipes eaten by lime	4
Pipes worn out	6
Settlement of earth	301
Settling of service boxes on pipes	28
Sidewalk bottoms broken	8
Sidewalk cocks required renewal	211
Sidewalk cocks reversed and water running into cellars	3
Sidewalk uprights above and below grade	10,144
Sidewalk uprights filled with dirt	11
Sidewalk uprights in way of edgestones	84
Sidewalk uprights required renewal	230

	Total Number during the Year.
Sidewalk tops broken	8
Sidewalk tops missing	20
Stopped by dirt	121
Stopped by fish	25
Stopped by gasket	5
Stopped by rust	329
Struck by pick	144
Unused pipes not shut off	4
Waste pin in S. W. cock blown out	1
Service pipes (portions of) changed from $\frac{1}{2}$ -inch to $\frac{3}{8}$ -inch pipe	4
Service pipes changed from tin-lined to all lead	7
Service pipes extended on account of street widening, Service pipes lowered on account of change in grade, Service pipes lowered as a protection from frost	29
Service pipes moved from way of various corporations, Service pipes raised on account of change of grade	13
Service pipes shut off and let on to permit owners to make repairs	3
Sidewalk cocks and uprights given to individuals to apply on private pipes	17
Sidewalk nuts oiled	2
Temperatures of water in cold water fountains, taken in summer time	421
Water post repairs of various kinds	24
Water posts shut off and let on during cold weather	532
Wooden plugs set in main uprights	1,277
	217
	1,555
	144

WATER DEPARTMENT.

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Hydrant lugs	3	Main pipe straps:	
Iron staples	43	4-inch	4
Puddling head straps:		6 "	8
10-inch	2	12 "	8
12 "	3	16 "	8
	5		28

CARPENTER SHOP.

Lowry hydrant boxes . .	49	Boston hydrant box	
Post hydrant boxes . .	377	pieces:	
Boston Lowry hydrant		1-inch	125
boxes	48	2 "	50
Boston hydrant boxes . .	12	3 "	50
Gate boxes, large . . .	25	6 "	25
Gate boxes, small . . .	556		250
Deacon meter boxes . .	7	Gate box pieces:	
Lowry hydrant boxes, tops	48	1-inch	663
Post hydrant boxes, tops	72	2 "	615
Gate hydrant boxes, tops		3 "	350
(large)	12	4 "	175
Gate boxes, tops (small) .	72	6 "	22
Lowry hydrant box pieces:		9 "	18
1-inch	391		1,843
2 "	150	Wooden horses	130
3 "	170		
4 "	94		
6 "	37		
	842		

OLD STOCK RENOVATED BY MACHINE AND BLACKSMITH SHOPS.

Valves:		Sidewalk cocks:	
3-inch	6	$\frac{3}{4}$ -inch	2
4 "	4	1 "	2
6 "	42		4
8 "	9	Air cocks:	
12 "	4	1 $\frac{1}{2}$ -inch	7
16 "	3	2 "	2
	68		9
Hydrants:		Pudding head cocks:	
Lowry	72	1 $\frac{1}{2}$ -inch	5
Boston Lowry	20	Male couplings:	
Bach. Post	57	$\frac{3}{4}$ -inch	63
Boston	2	$\frac{1}{2}$ "	31
Salt water	1		94
	152	Coupling nuts:	
Corporation cocks:		$\frac{3}{4}$ -inch	1,284
$\frac{1}{2}$ -inch	3	$\frac{1}{2}$ "	46
$\frac{3}{4}$ "	64	1 "	68
$\frac{1}{2}$ "	5	1 $\frac{1}{2}$ "	10
1 "	34	1 $\frac{1}{2}$ "	9
1 $\frac{1}{2}$ "	1	2 "	12
1 $\frac{1}{2}$ "	10		1,429
	117	Coupling tubes:	
Angle cocks, $\frac{3}{4}$ -inch . .	1	$\frac{3}{4}$ -inch	1,281
Water post cocks:		$\frac{1}{2}$ "	3
1 $\frac{1}{2}$ -inch	1	1 "	106
1 $\frac{1}{2}$ "	22	1 $\frac{1}{2}$ "	1
	23	1 $\frac{1}{2}$ "	1
		2 "	2
			1,394
		Solder nipples, $\frac{1}{2}$ -inch .	4

Bolts:			Hydrant wastes,		
Lowry hydrants .	90		large	59	
Post "	106		Hydrant wastes,		
B. L. "	28		small	1	60
Lowry hydrant					
extension . . .	32				
Post hydrant ex-					
tension	8				
		264			

In addition to the foregoing, the Machine, Carpenter, Paint, Plumbing, and Blacksmith shops performed much work of a miscellaneous nature in the maintenance and improvement of the property of the Water Department. Some of the important items are as follows:

- Made 315 tools for various purposes. Aggregate cost, \$1,196.20.
- Repaired 297 tools of various kind. Aggregate cost, \$1,121.94.
- Made 93 patterns. Aggregate cost, \$901.89.
- Sharpened 23,720 picks, chisels, and bars. Aggregate cost, \$1,252.06.
- Made cabinets and table for different offices of department. Aggregate cost, \$319.82.
- Performed 140 odd jobs in yards, shops, and stables. Aggregate cost, \$1,338.55.
- Whitewashed buildings in yard.
- Painted inside of buildings at West Roxbury yard.
- Repaired and painted building at Brookline reservoir.
- Repaired stairs and fence around grounds at Brookline reservoir.
- Painted water tank and inside of water tower at Orient Heights, East Boston.
- Painted and made quite extensive repairs on buildings at Charlestown yard.
- Repared yard and painted fence at Charlestown yard.
- Made excavations at different points throughout the city to enable Engineering Department to make tests for electrolysis.
- Changed and repaired gauges for Engineering Department, City Hall.
- Established testing apparatus for Engineering Department at Moon Island.
- Made test-bars for Engineering Department.
- Leaded a large sleeve for Sewer Department, Brighton.
- Laid large sewer pipes and jointed the same for Sewer Department at Cow Pasture.
- Wet down the baseball grounds on account of fireworks.
- Performed odd jobs for Meter Department to the total sum of \$271.36.

REPORT OF THE ENGINEER.

ENGINEERING DEPARTMENT,
50 CITY HALL, February 1, 1904.

MR. EUGENE S. SULLIVAN,

Water Commissioner:

SIR,— I herewith submit the following report for the past year of the work done and records kept:—

During the year 15 miles of main pipe have been laid and 10.2 miles abandoned, making a total length in the system of 732 miles.

Some of the most important work done is the following:

The 30-inch main in Tremont street was relaid for a distance of 1,084 feet between Northampton and Rutland streets. This is one of two large parallel pipes laid from Brookline Reservoir to Boston Common in 1848, which supplied the city until 1859, when a third main was laid. These two mains are in good condition throughout their length, with the exception of the portions in Tremont street from Hammond to Dover streets, where the pipes were originally laid in marsh mud, and were afterwards raised to conform to the present grade of Tremont street. The condition of the original soil and the character of the filling have caused a demoralization of the iron in the pipes sufficient to seriously impair their strength. It is proposed to continue the relaying of these mains where they are in bad ground as fast as practicable.

The work of relaying and raising out of the marsh mud the 40-inch low service main in Brookline avenue, from Bellevue to Jersey streets, was completed by relaying 594 feet of pipe.

The 30-inch high service main in Washington street, Dorchester, was extended 928 feet, from Burt street towards Codman street.

Owing to the lowering of the tracks of the N.Y., N.H. & H. R.R. under West Fourth-street bridge, it was necessary to relay 317 feet of 20-inch and 490 feet of 12-inch pipe from Fort Point Channel to Foundry street; this work was somewhat difficult, as the location crossed nineteen railroad tracks on which trains were constantly moving. At the same time connection was made with the 20-inch pipe laid in

1894 in West Fourth street from Foundry street to Dorchester avenue.

The consumption of water on the island service in the harbor has increased rapidly during the past few years, largely owing to the establishment, by the United States government, of a permanent garrison at Fort Strong on Long Island, of a fort on Lovell's Island and of a larger garrison at Fort Warren. To provide an adequate supply at these points and at the City Institution, it was necessary to lay 3,338 feet of 12-inch pipe on Long Island from the west end of the island to a point near Fort Strong.

The present winter has been one of unusual severity. Not since 1874 has so much trouble been experienced from frozen mains, hydrants and services. Careful measurements have been made of the depths to which the frost has penetrated, of which the following table is a summary :

**Depths of Frost from Actual Measurements During the
Present Winter.**

LOCATION.	Character of Soil.	Depth of Frost.	Conditions at Surface.
		ft. in.	
Western ave., at No. Harvard st., Bri..	Gravel....	5 6	Car tracks, ground bare.
Southampton st., at Reading st., Rox..	Clay.....	5 5	" " " "
First st., near L st., S. B.....	Gravel....	5 3	Sidewalk, " "
Codman pk., near Townsend st., Rox..	Stone fill- ing and clay	5 2	About 2 in. ice, 6 in. snow.
Edgerly pl., off Winchester st., C. P....	Gravel....	5	Sidewalk, ground bare.
Beacon st., at Fairfield st., C. P.....	"	4 10	" " "
Cambridge st., at Union sq., Bri.....	"	4 10	5 in. ice.
Broadway, at I st., S. B.....	Clay and gravel ..	4 9	Car tracks, ground bare.
Centre st., at Elliot sq.....	Gravel....	4 9	About 6 in. ice.
Eighth st., at H st., S. B.....	Clay.....	4 7	Car tracks, ground bare.
Dorchester ave., at D st., S. B.....	"	4 6	" " " "
Reading st., at Southampton st., Rox ..	"	4 6	About 6 in. ice.
Dudley st., at North ave., Dor.....	Gravel....	4 6	" " "
Tremont st., at Canton st., C. P.....	Clay.....	4 4	" 16 " " 8 in. snow.
Shawmut ave., at Waltham st., C. P....	"	4 4	Car tracks, ground bare.
Atlantic ave., at Long Wharf, C. P.....	Clay, etc..	4 4	Sidewalk, " "
" " " Clinton, C. P.....	Clay ..	4 4	Car tracks, " "
Broadway, at Emerson st., S. B.....	Gravel....	4 4	Sidewalk, " "
East Fourth st., at N st., S. B.....	"	4 4	" " "
Parker st., near Huntington ave., Rox.,	Clay	4 4	10 in. ice.
Tremont st., at Parker st., Rox.....	"	4 3	Car tracks, ground bare.
A st., at Broadway, S. B.....	"	4 3	About 1 in. ice.
Tremont st., at Rutland st., C. P.....	Clay and gravel ..	4 1	" 16 in. ice, 8 in. snow.
Shawmut ave., at Northampton st., C. P.	Clay and gravel ..	4	4 in. ice.
Porter st., at Chelsea st., E. B.....	Clay	4	About 6 in. ice, 6 in. snow.
Bradford ter., near Centre st., W. R. ..	"	4	" 1 in. snow.
Summer st., near A st., S. B.....	"	4	" 10 in. ice.

The improvement of the fire service has been prosecuted vigorously during the year, the following work having been done:

3,283	feet	16-inch	pipe	laid,	replacing	12	inch	and	6	inch.			
18,306	"	12	"	"	"	"	8	inch,	6	inch	and	4	inch.
12,656	"	10	"	"	"	"	6	inch	and	4	inch.		
7,435	"	8	"	"	"	"	6	inch	and	4	inch.		

The experiment of thawing frozen services by electricity was tried with success; the pipes thawed were of lead, the time required to do the work varying from three to seven minutes. Both the Edison alternating current of 2,250 volts and the Edison direct current of 220 volts were used; in the case of the alternating current a transformer and a water rheostat were used in the primary circuit, reducing the voltage in the secondary circuit to about 50, with about 250 to 300 amperes. One of the secondary wires was connected to the service pipe inside the house, the other to a hydrant in the street. When the direct current was used a connection was made with one of the outside wires of the Edison three-wire system in a junction box in the street, and the current, after passing through a water rheostat for reduction, was carried by a wire directly to the service pipe in the house, whence it passed through the service to the main.

Electrical investigation has been continued, and it has been found that at points the water pipes are being rapidly destroyed by electrolysis, notably in the vicinity of power stations; the condition of the pipes in some places where they have been exposed for examination is such that unless remedial measures are taken at once serious trouble is certain.

Respectfully submitted,

WILLIAM JACKSON,
City Engineer.

WATER DEPARTMENT.

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Monthly Rainfall in Inches during 1908 in Various Places in Eastern Massachusetts.

PLACES.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Framlingham.....	3.77	3.91	6.34	2.94	1.15	8.55	2.55	3.60	1.49	4.42	1.48	3.05	43.25
Dam 4, Ashland.....	3.83	4.02	6.58	2.91	0.67	8.05	2.86	3.69	1.46	4.78	1.62	3.19	43.06
Cordaville.....	3.96	4.02	7.25	3.24	0.94	9.98	2.96	3.96	2.17	4.85	1.63	3.46	48.42
Lake Cochituate.....	3.81	3.88	6.30	3.17	1.56	7.61	3.00	4.20	1.81	4.27	1.53	3.18	43.82
Chestnut Hill Reservoir.....	3.95	4.60	6.62	4.33	0.79	8.14	3.54	4.01	2.96	4.87	1.53	3.01	48.35
Spot Pond.....	3.78	4.58	6.38	4.67	0.83	9.16	3.32	3.44	1.44	3.84	1.40	3.18	45.53
Cambridge Observatory.....	3.54	3.65	6.09	4.07	0.38	7.40	3.11	3.56	1.67	4.05	1.52	3.25	42.29
Waltham, Boston Manufacturing Company.....	4.76	4.23	6.85	4.21	1.75	8.29	3.83	3.54	2.17	4.74	1.82	4.20	50.39
Lowell, Locks and Canals Company.....	3.39	3.95	5.90	3.69	0.82	9.18	2.62	3.68	1.74	4.46	1.53	3.01	43.97
Main Drainage Yard, 795 Massachusetts avenue.....	3.47	3.22	6.51	4.41	0.49	7.21	3.25	3.72	2.61	4.17	1.43	3.02	43.51
Average of above ten places.....	3.83	4.01	6.48	3.76	0.89	8.36	3.10	3.74	1.90	4.44	1.55	3.26	45.32

GENERAL STATISTICS.

BOSTON WATER DEPARTMENT.

Daily average amount used through meters during 1903 (gallons)	18,537,000
Number of services February 1, 1904	90,013
Number of meters in service February 1, 1904	4,727
Number of motors under supervision February 1, 1904	130
Number of elevators under supervision February 1, 1904	588
Length of supply and distributing mains in miles February 1, 1904	732
Number of public hydrants in use February 1, 1904	7,563
Yearly revenue from annual water rates	\$1,287,200 69
Yearly revenue from metered water	\$1,049,831 58
Percentage of total revenue from metered water,	44.9
Yearly expense of maintenance	\$703,134 86

¹BOSTON WATER BOARD.

ORGANIZED JULY 31, 1876.

TIMOTHY T. SAWYER, from July 31, 1876, to May 5, 1879; and from May 1, 1882, to May 4, 1883.
 * LEONARD R. CUTTER, from July 31, 1876, to May 4, 1883.
 * ALBERT STANWOOD, from July 31, 1876, to May 7, 1883.
 * FRANCIS THOMPSON, from May 5, 1879, to May 1, 1882.
 WILLIAM A. SIMMONS, from May 7, 1883, to August 18, 1885.
 GEORGE M. HOBBS, from May 4, 1883, to May 4, 1885.
 JOHN G. BLAKE, from May 4, 1883, to August 18, 1885.
 WILLIAM B. SMART, from May 4, 1885, to March 18, 1889.
 * HORACE T. ROCKWELL, from August 25, 1885, to April 25, 1888.³
 THOMAS F. DOHERTY, from August 26, 1885, to May 5, 1890; and from May 4, 1891, to July 1, 1895.
 ROBERT GRANT, from April 25, 1888, to July 18, 1893.³
 PHILIP J. DOHERTY, from March 18, 1889, to May 4, 1891.
 * JOHN W. LEIGHTON, from May 5, 1890, to July 1, 1895.
 WILLIAM S. McNARY, from August 15, 1893, to November 5, 1894.³
 CHARLES W. SMITH, from January 23, 1895, to July 1, 1895.

¹WATER COMMISSIONERS.

CHARLES W. SMITH, from July 1, 1895, to January 20, 1896.³
 JEREMIAH J. MCCARTHY (Acting), from January 20, to February 1, 1896.
 JOHN R. MURPHY, from February 1, 1896, to October 17, 1899.³
 BENJAMIN W. WELLS (Acting), from October 17, 1899, to December 28, 1899.
 * AUGUSTUS P. MARTIN, from December 28, 1899, to March 13, 1902.²
 JAMES DONOVAN (Acting), from March 14 to 17, 1902.
 EUGENE S. SULLIVAN, from March 17, 1902, to present time.

Assistant Water Commissioners.

JEREMIAH J. MCCARTHY, from July 1, 1895, to January 20, 1896.
 EDWARD C. ELLIS, from February 17, 1896, to November 1, 1900.
 * MELVIN P. FREEMAN, from February 7, 1900, to March 9, 1902.³
 WILLIAM H. OAKES, from November 1, 1900, to March 9, 1902.³
 EUGENE S. SULLIVAN, from March 10 to March 17, 1902.
 ISAAC ROSNOSKY, from March 10, 1902, to present time.
 JOHN J. LEAHY, from March 21, 1902, to present time.

Chief Clerk and Secretary.

WALTER E. SWAN.

General Superintendent Income Division.

JOS. H. CALDWELL.

Superintendent Distribution Division.

WILLIAM J. WELCH.

City Engineer and Engineer of the Department.

WILLIAM JACKSON.

¹ Under Chap. 449 of the Acts of 1895 the Boston Water Board was abolished, and the Water Supply and Water Income Departments consolidated and placed under the charge of one Water Commissioner.

* Deceased.

² Died in office.

³ Resigned.



